

The Urban Mind

Cultural and Environmental Dynamics

Edited by
Paul J.J. Sinclair, Gullög Nordquist,
Frands Herschend and Christian Isendahl



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Panorama over the southern side of Istanbul facing north east.

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*This book is dedicated to the memory of
Professor Peter J. Ucko*

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Preface

In Greek cosmology, Uranus, all-powerful god of the Sky, and Gaia, goddess of the Earth and its lands, were lovers. Of this union Gaia bore a daughter, Mnemosyne, goddess of Memory. Her role is treasured in the English word *mnemonic*, an aid to remembering. Mnemonics can be verbal, kinesthetic (physical activity), visual, olfactory, auditory. To *re-member* is kinesthetic and puts things back together; to *re-call* is auditory, a response to a summons. Both are verbal.

What are the implications of this tale? Together the parents constitute the world in which humans live, and are themselves powerful mnemonics: the sky holds the moon and stars, planets, constellations, meteors and other phenomena to which humans give meaning. Long before drawing and writing, our forebears learned their patterns and memorized their meanings. Simply seeing them could bring memory back. To an even greater degree the terrestrial world, rich in meaning, leaves keys that open into stories that yield knowledge and right action.

The oral poet Hesiod, who lived in the 7th century BC, recounts how Zeus lay for nine nights with Mnemosyne: "...when a year was passed and the seasons came round...she bore nine daughters, all of one mind, whose hearts are set upon song and their spirit free from care..." (Theogony 53). These daughters of Mnemosyne are the Muses, goddesses of inspiration. They are Calliope (Epic Poetry), Clio (History), Erato (Love Poetry), Euterpe (Music), Melpomene (Tragedy), Polyhymnia (Hymns), Terpsichore (Dance), Thalia (Comedy), and Urania (Astronomy). We refer to them as the nine Muses, sweet companions to inventors of the Arts.

To practice any one of these Arts, memory, stored in the senses, is a critical skill. Landscapes – the spatial manifestation of the relations between humans and their environment – are densely mnemonic: knowledge about them can be activated through all the senses. Landscape is a unit of analysis in many disciplines (archaeology, geography, geomorphology, ecology, architecture, art, planning). The landscape 'scale' is a powerful platform for integrating human activities with their broader environmental context.

Landscapes are the human canvas: they are constructions of the mind, filled with cues to memory. We store important information about how to use and maintain a landscape (a garden, a forest, a suburban lawn) and what to think about it (a source of nourishment, a mystical contact with Nature, a status symbol) (Basso 1996; Schama 1995). Because we act out our thoughts on landscapes,



Plate 1. "Sarcophagus of the Muses", Museo Ostiense (Roman, end of 2nd century AD). Photo: Fredrik Tobin

the history of landscapes can be seen as 'congealed' politics: outcomes of the struggle over resources and ideas.

The Greeks were not the first urban societies (those may be found in what is now Iraq and were established more than seven thousand years ago) but it is the Greek vision of the city to which Western civilization has aspired. The present volume takes a more comprehensive view. The authors explore cities elsewhere in Europe as well as in Southeast Asia, southern Africa, and Central America; they examine different definitions of the city, and investigate cities as crucibles of language and as laboratories for ideas about their practical, resilient management in the face of environmental change.

The pressing need to understand how future cities can meet the needs of their inhabitants rightly begins with lessons from the past. It is only there that we can know both the nature of urban experiments and their outcomes. We have the conceptual and practical tools to do so: the transdisciplinary framework of historical ecology and research in environmental history and in landscape and environmental archaeology and anthropology. We can amalgamate the intertwined and falsely separated histories of the biophysical world and of human activity.

Collaborative projects are underway to use these tools to connect the historical sciences with contemporary work in ecology and complex adaptive systems. One promising approach, originating in the Earth system science community, is to foster collaboration among researchers who work in the same region or who share a comparative interest such as ancient water management or the history of cities. The Integrated History and Future of People on Earth (IHOPE) facilitates an international network of scholars, fosters their projects, and offers a framework for integration at regional, continental, and global scales (Costanza *et al.* 2007). IHOPE is a special project of the International Geosphere-Biosphere Programme (IGBP). In addition to IGBP, IHOPE's sponsors are the International Human Dimensions Programme (IHDP) and two IGBP core projects: Analysis, Integration and Modeling of the Earth System (AIMES) and Past Global Changes (PAGES).

IHOPE's goals are to produce an integrated record of biophysical and human system change beginning in the later Pleistocene, with emphasis on the last several millennia. This integrated record will be used to generate research questions, eschewing a simple causation narrative based on temporal or geographic proximity. IHOPE encourages the testing of human/environment system models against the integrated history to explore options for the future of humanity. IHOPE recognizes the value of the archaeological and historical record, realizes that the laboratory of the past can flag mistakes and uncover solutions, and seeks broad collaboration. The key questions are: What are the interacting processes and scales that steer change in institutions and societies? What are the contributions of humans?

IHOPE facilitates discussion and adoption of perspectives, theories, tools, information, and knowledge from a variety of sources. From geographic scales where human activity is most easily understood (e.g., landscape, region) to Earth processes at continental and larger scales (e.g., el Niño/la Niña, the Indian sub-continental monsoon) and over long periods (hundreds and thousands of years), the IHOPE goal is to integrate relevant scholarship, whatever its source.

In summary, it is time to study the big experiment of human activity on its home planet, Gaia. With the help of Gaia's daughter Mnemosyne, her daughters the Muses, and our contemporary skills in learning about the past, we have the

physical and sensory memory of human knowledge and experience to guide us. While the larger urban experiment may not have been entirely planned, many aspects of the cities – objects of this study – were. This volume begins the search of past cities for clues to our urban future.

Carole L. Crumley
Stockholm Resilience Centre, Stockholm University

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The Urban Mind: A Thematic Introduction

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This volume originates in an Idea Development grant from Mistra (Foundation for Strategic Environmental Research) in 2008. Discussions in the project have focused on the need to rethink our approach to the understanding of urbanism. The approach advocated here views human cognition as essential for our current concerns about the origins and functions of cities and towns, whether from the perspective of urban form and metabolism, or governance and environmental interactions. In our discussions we have recognized that both the built and the non-built environment of towns and cities, including the full range of expressions of material culture, are intimately connected with social memory and identity. This leads to a conception of the Urban Mind which challenges traditional objectivist views of urbanism. Towns are incorporated in human thought; they are founded, developed and abandoned as a result of human decisions, be they conscious or unconscious. The external forcing mechanisms of climate change certainly influence these decisions, as will be illustrated here, but increasingly we are becoming aware of the reciprocal effects of human thought and action upon the environment at the local and sub-regional scales, sometimes locking settlement systems and their inhabitants into responses which overshoot the capacity of the urban organizational form to adjust to perturbations without significant transformation.

Transformation rather than collapse is a recurring theme in our studies. Bald assertions of system collapse with all attendant evils have been prevalent in the literature and are used today as political goads. But on closer analysis, as will be exemplified in this volume, despite significant challenges there is convincing evidence throughout history of continuity even if the specific locations of, for instance, cities are shifted or organizational regimes transformed. There is little doubt in our minds that these issues are central in grappling with the multifaceted and deeply serious problems of global change which face us all today. It is becoming an overused but nevertheless still apposite observation that more than half of the world's population now lives in cities. Sustainable outcomes for urban development with increases of approximately 200 million urban dwellers in China alone in the coming decade are crucial challenges which affect us all.

In formulating the Urban Mind project the participants have engaged in a multi-disciplinary “Rethinking of Human Nature”. In the course of our discussions the sharp divides between urban and rural dissolved into considerations of the importance of urban nature in maintaining resilient urban structures. The importance of urban farming and food production in the often threatened urban green areas has been recognized and is increasingly incorporated in our new conception of urbanity. In addition we have found that a focus on towns and cities is insufficient in itself to understand settlement system complexity and we now better understand the need for the enlargement of our perspective on centralized urban societies to include non-urban, self-organized, heterarchical networks of settlements with no obvious sign of hierarchy. Further, our interest in the past as an object of study in itself, alienated from the present, let alone the future, is now changing to an increasing awareness of the potential benefits of contributing insights about the past to current joint efforts in creating more sustainable futures.

This volume is the result of two years of work. We make no claims to have finished the task; rather we aim at “good beginnings”, gathering resources close to hand and demonstrating capacity for further interdisciplinary research with the production of published results in this volume at the end of the idea development project period. We have linked together close to 40 colleagues aiming mainly to demonstrate the strength we have in the near vicinity as well as the versatility of our extended networks of research collaboration. Individual intellectual strength is not the same as coordinated strength. We have, however, been repeatedly surprised to find previously unrecognized resources close to hand which overcame our sometimes deep-rooted traditions of individual scholarship and made it worthwhile, at least for a time, to collaborate. The primary research area chosen for our project centres on the Eastern Mediterranean region, reflecting the strength in depth of specialists available in Uppsala. In addition a global perspective was developed and this again reflects the scholarly interest in the near vicinity and in our extended research networks.

The Urban Mind

This cultural and environmental dynamics project derives a new concept, the ‘Urban Mind’, from combined humanities and natural science studies of the development of urbanism and climate change in the Eastern Mediterranean and the Middle East. The close to 40 scholars of Uppsala University, Stockholm University and the Royal Institute of Technology have formulated the concept as part of the IHOPE (Integrated History and Future of People on Earth) initiative and this has been supported by WHEN, the World Historical Ecology Network, recently established in Uppsala. The Urban Mind concept has been assessed in more detail with a specific case study: Constantinople – Istanbul. The global relevance and developmental diversity of the Urban Mind concept has further been indicated with ongoing studies of cognitive aspects of urbanism and climate change in the Americas, Eurasia and Africa.

The development of urbanism has been a global phenomenon unfolding as co-evolving human-environmental systems over millennia, but taking radically different forms in different times and places – and with widely varying consequences. Crucially, urban living began at least in part as a mental process which acquired physical substance, and in this sense towns are ideological constructs: as

we invent them, so we believe in them. What we call “towns” arose from existing patterns of human settlement, and in some places the towns have lasted for thousands of years. Towns as spatially ordered, demographically dense settlements, and their affiliated communities, add a cognitive dimension to the landscape. Landscape is taken here as a multidimensional mosaic relating socio-cultural and bio-physical aspects of reality. The complex interactions of cognitive and physical factors in urban settlements and their surroundings at different scales often defy simplistic models of linear development. Towns contain a critical mass of people often from differing cultural backgrounds, producing a variety of ideas, goods and services. Towns are primarily attractors of humans but also support a diverse range of other animals and plants. Urban dynamics presuppose systems of control but also free zones where sub-cultures thrive. Throughout the project we deal with settlement forms which have not traditionally been seen as urban but when viewed through our theoretical lens are seen to be an integral part of settlement system complexity.

We have studied town-dwellers’ mental landscapes and organization of physical space from the origins of urbanism over 10000 years ago until the enormous changes of the last two centuries of the Anthropocene. Human populations the world over have shifted from predominantly rural to urban lifestyles. It is also possible to derive similar but different Urban Mind concepts from deep time assessments of the environmental, historical and cultural background to urbanism in the Americas, Eurasia and Africa – often developing concurrently with the Middle Eastern towns. Our consideration of Northern Europe and Scandinavia provide a control study to the urban impetus of the Mediterranean and Middle East, responding first to the expansion of Rome and subsequently its withdrawal. Some societies resisted the urban impulse and urban mindset, for centuries, in a way that can shed considerable light on the development of towns elsewhere. Taken together, we aim ultimately at a genuinely culturally and environmentally informed approach to the cognitive dimensions of urbanism, the most prevalent form of societal organization in the world today.

Aims

1. *Identify periods of significant environmental change in the Middle East using the available high resolution multi-proxy data.*

Environmental change can trigger urbanisation as well as crisis in urban societies. The second aim involves societal changes in consecutive periods with varying climatic conditions. We have studied the cultural dynamics associated with the transition between the two and incorporated these into our concept of Urban Mind. Three model environmental situations have been investigated. (a) Hydrographic changes in Egypt and Mesopotamia and the effects on early civilizations. (b) Environmental factors affecting the collapse of the Late Bronze Age Aegean palatial civilizations. (c) The effects of the Medieval Warm Period and the Little Ice Age. The development of this link to environmental studies has been the responsibility of Professor Karin Holmgren and Dr Martin Finné (Stockholm University).

2. *Develop the concept of Urban Mind synthesised from comparative studies of long-term development of urbanism in the East Mediterranean and Middle East and shorter-term studies of urban cognitive forms and organization in the region.*

To achieve this we have assessed the spatial organization of ruined and existing towns and their relation to cultural parameters such as language and identity. We began with: (a) a multi-scalar analysis of urban patterns of cognition and associated landscapes using a variety of archaeological and documentary sources as well as GIS methodology; (b) the spatial organization of a limited selection of small towns and city states and even oasis towns as well as larger cities and metropolises; (c) the analysis of language structure/syntax in urban and non-urban areas.

3. *Assess the utility of the Urban Mind concept for understanding socio-environmental interactions in time depth in a specific urban complex, Constantinople/Istanbul*

We have selected Constantinople/Istanbul as a case study to demonstrate the relevance of the Urban Mind concept integrated with information on climate change. We have assessed the relevance of the long-term perspective for management of urban systems facing the need to transform significant aspects of their organization in the face of rapidly changing global conditions. We have found it important to develop our ideas in close cooperation with the IHOPE International Project Office at the Stockholm Resilience Centre in terms of science and research as well as policy links as in the Resilience Centre Programme on Urban Social-Ecological Systems and Globalization.

4. *Consider the global multi-cultural implications of the Urban Mind concept by incorporating comparative perspectives from the Americas, Eurasia and Africa.*

The Urban Mind has multiple origins, and a viable concept must have a global dimension. In order to incorporate this in the idea development project we have drawn upon the existing network of the Department of Archaeology and Ancient History and developed three study frames: (a) in the Neotropics centred on southern Mesoamerica 500–1700 AD (through established competences at the department and existing networks of colleagues in the United States and Latin America); (b) in the high latitude areas with a North Sea centred area, 500–1700 CE (through the existing cooperation with the University of Aberdeen; and (c) in tropical Southern Africa 500–1700 AD (through the existing cooperation with the University of Pretoria and other universities in Africa). In each area we have access to refined studies of the cognitive aspects of urbanism and already established settlement data sets amenable to multi-scalar GIS analysis and very high resolution climate change data.

Benefits for sustainability problems

The Urban Mind idea development project is exploratory and has an ultimate purpose to inform urban planning for sustainable urban systems. Humanists and natural scientists bring a range of specialist competence capable of handling large

and complex cultural and environmental data sets. The humanists with access to a range of cultural and linguistic information provide completely new source materials for informing current discussions on social and ecological resilience and sustainability. The 'Urban Mind' concept adds a crucial cognitive dimension to our understanding of the organization of modern urban complexes which currently house more than 50% of the world's population. Urban dwellers face acute needs to derive strategies for dealing with the multiple effects of, for example, resource depletion and climate change in cities today. Highlighting the cognitive aspects of urban organization past and present contributes to a better environment for urban dwellers dealing with problems of urban transitions in a humane and people-centred way.

Intellectual background

From the outset, given that the intention of the project was to develop ideas, we were unwilling to impose a standardized concept defining urbanism upon the project groups. Accordingly the treatments of urbanism in the different periods reflect the trends in scholarship in these fields, which are often located quite separately in the academic world, with their own research agendas, conferences and, not least, editorial styles and traditions! The reader will therefore note a diversity of approaches to urbanism in the different research frames. There is, however, a broad recognition of V. Gordon Childe's listing of urban attributes as a point of departure for discussion. Further, there is a broad acceptance that urbanism entails a relative concentration of people engaged in tasks which are not necessarily directly related to primary production of food and accordingly the existence of groups of people engaged in managerial and ideological tasks which reinforce authority, be this centralized or decentralized. Such a consensus, if that is what it is, does not stretch far out of the region and we have included examples of urbanism from North America, Europe, Southeast Asia and Africa to demonstrate to the reader the diversity of urban trajectories, forms and expressions which exists in the different regions of the world.

We believe it is important to underline the diversity of urbanities to counter old-fashioned views of single or even multiple centres of urban origin and subsequent diffusion of urban practices. The sheer diversity of urban contexts illustrated in this volume makes it difficult to accept such a restricted view of urban origins. It seems to us much more likely that urban centres and distributed networks of societies occur ubiquitously throughout human history, in some cases even in hunter-gatherer societies. The time frame of this volume includes examples from throughout the post-glacial Holocene period and the last two hundred years of the Anthropocene. Energy regimes develop, from that of the hunter-forager who appropriates existing resources, to agricultural regime settlement systems which transform sunlight into food by harnessing the potential of domestic plants and animals and timber resources, to the societies of the Anthropocene characterized by their intensive consumption of non-renewable fossil hydrocarbon energy sources, first coal and then oil.

In the current post-peak oil period it is widely argued, but not without controversy, that more than 50% of the originally available oil reserves have already been used. It is also noted that atomic or fusion power does not yet provide a safe alternative to oil (also not without controversy). Given these positions and with

the lack of development of renewable energy sources, we think it appropriate to consider essential human values from a humanist perspective to remind us of the achievements of the urban mind when previously faced with hard decisions. Coming transformations – of rural populations measured in the hundreds of millions into newly urbanized ones in e.g. China and India, and currently urbanized communities being required to rethink their urban organization to greener, less energy-intensive forms – promise to be no less difficult. Can we learn useful lessons from the past? Here the individual humanists in our group of scholars differ quite markedly. Awareness of the all too recent appropriation of historical scholarship in Nazi Germany and the intellectual contortions forced upon scholars in Stalinist Russia leads to a cherishing of individual freedoms among current scholars. Nevertheless the actions of the leaders of the “free” world all too often resonate with those of past Roman emperors both in debasing their currencies and in attacking the same regions of the Eastern Mediterranean. It is hard to avoid a sense of *déjà vu*.

The Urban Mind project is part of the IHOPE (Integrated History and Future of People on Earth) initiative hosted by the IGBP (International Geosphere-Biosphere Programme). In these programmes thousands of scientists are marshalling their resources to provide insights and to contribute solutions to pressing challenges of global change. It is our clear consensus in the Urban Mind group that archaeologists, historians and linguists have access to significant source material to facilitate this endeavour. The time dimension provided by our disciplines is an essential component for the understanding of urban complexity today and, we dare to say, for creating more sustainable urban futures tomorrow as well. Turning the time arrow of archaeological and historical scholarship towards the future, while maintaining the best traditions of intellectual diversity and indeed the essential freedom to make mistakes and a capacity to correct errors in the light of continuing research, seems an integral part of intellectual good health and well-being in society.

In the present project, the role of history, languages and religion in the shaping of the cognitive aspect of urban organization in modern and ancient societies has been undertaken in comparative frameworks using multi-scalar and temporal frames of reference. This constellation of researchers in the humanities at Uppsala University, working together with colleagues from Stockholm, provides a specialist competence unique for Sweden and overarches previous academic boundaries. The Urban Mind programme builds on new theoretical frameworks particularly within archaeological discourses on historical ecology,¹ landscape archaeology,² environmental archaeology³ and the anthropology of landscape.⁴

The ideas we have developed with Mistra support are closely associated with the establishment of a new intellectual framework in the IHOPE programme under the auspices of the IGBP (International Geosphere-Biosphere Programme). Specifically, “Human history has often focused on the rise and fall of great civilizations, wars, and specific human achievements excluding important ecological and climate contexts. Human history and earth system history have developed independently and only recently has it been recognized that current earth system

1 Crumley 2001; McIntosh *et al.* 2000; Erickson & Balée 2006.

2 Tilley 1994; Ashmore & Knapp 1999.

3 Redman 1999 ; de Vries & Goudsblom 2002.

4 Hirsch & O’Hanlon 1995; Basso 1996; Ingold 2000; Stewart & Strathern 2003; Koc *et al.* 1999.

changes are strongly affected by the human-environment system. Integration of human history and earth system history is important for understanding global change and in developing adaptation strategies for the future”⁵.

In following on from the Urban Mind project we would like to further the IHOPE aims for a better understanding of the Anthroposphere/Geosphere dynamics. Natural resources, the central focus of many of today’s conflicts, are not only physical values external to society but cognitive values prioritised over extended time periods by individual actors. The humanities provide the means of integrating the voices of individuals from linguistics and historical documents. We aim to contribute new forms of integrated history and cognitive ecology of the urban experience which we see as a cumulative construction over tens, hundreds and thousands of years by human actors. This is a radical yet well-founded departure from traditional humanities approaches and we believe it has significant implications for modern society.

Spatial methods

Environmental and cultural dynamics of urbanism are constituted on adaptive and interdependent socio-ecological systems, which in turn are linked across temporal and spatial scales in complex non-linear ways.⁶ The modelling of nested socio-ecological systems necessitates a methodology with capacity of handling complexity and cross-scale systems analysis. *Geographical Information Systems* (GIS) is a computer-aided system of methods for research on spatial data. Today, remote sensing and GIS are essential for applied research on connections between the history and geography of human activities and processes of the bio-physical landscape.⁷

For two decades the Archaeological GIS-laboratory in Uppsala University has conducted research on urban origins in Africa and landscape dynamics. The GIS-laboratory will have a central support role in future Urban Mind projects. Researchers at the GIS-laboratory will develop interdisciplinary multi-scalar applications on urban centres and their surroundings. Available satellite imagery provides good opportunities for land system analysis⁸ of urban hinterland. Moreover, work on developing tools for archaeological analyses of urban centres has been undertaken.

Research contributions

In the following sections the base description of the different contributions is selected from the abstracts of the different chapters.

5 Costanza *et al.* 2007; Dearing *et al.* 2006.

6 Folke 2006; Gunderson & Holling (eds) 2002.

7 Turner & Taylor 2003; Conoll. & Lake 2006.

8 Strömquist *et al.* 1994.

Environmental dynamics

In Chapter 1, an overview of climate change in the central region of the project is presented by Martin Finné and Karin Holmgren. In their own words, “[they] review the climate evolution over approximately the last 11500 years (the Holocene) in the Eastern Mediterranean and the Middle East. Published papers and data series are analysed and compiled in order to reveal spatial and temporal patterns in humidity and temperature changes. The results are discussed and the last 6000 years are presented in a series of coloured maps of 200-year time slices”. This contribution provides an essential point of departure for the assessment of the long-term influence of climate change on urban development in the region.

Early examples of settlement aggregation in the Eastern Mediterranean and Central and Western Europe are presented in Chapters 2 and 3 by Julia Mattes and Kristina Hesse, respectively.

In Chapter 2, Julia Mattes argues that “Like the global population of today, the Neolithic people had to confront changes in climate as well as the fact that ‘modern life’ caused environmental degradation. The transition from a nomadic hunter-gatherer lifestyle to sedentism and farming radically influenced and changed the landscape and had a destructive impact on the surrounding ecosystems.” A number of authors in our group might prefer to emphasise transformative rather than destructive impact but the jury is still out on that question! Mattes also describes “cultic rituals of the Stone Age and their cognitive background as part of early human identity”.

In Chapter 3, Kristina Hesse stresses that “social and economic interaction [in the ancient Near East] was deeply rooted in cognitive expressions and should be connected to the dispersal of material culture and ideas over extended geographical areas”. Hesse discusses cognitive aspects of the emergence of early societies beginning with the first signs of sedentism in the southern Levant c. 12500 BP. Some glimpses into early farming at Jericho and the Pottery Neolithic of, in Hesse’s words, “village culture of Çatalhöyük in central Anatolia” are also provided. These are arguably urban settlements – another hotly debated topic! Later the focus in Hesse’s chapter shifts to the urbanisation process of Lower Mesopotamia in the fourth millennium BC, where agricultural innovations and economic networks, based on regional interaction and long-distance colonization of Upper Mesopotamia, were made possible through the strict religious and administrative organization.

Ancient urbanism

In Chapter 4 Olof Pedersén, Paul Sinclair, Irmgard Hein and Jakob Andersson give a brief overview of socio-environmental interactions underpinning urbanism in the part of the world with the longest urban development, that is, the Ancient Near East and Egypt c. 5000–100 BC. Further details and results of computer modelling work are presented for southern Mesopotamia, with a special focus on the city of Babylon during the reign of Nebuchadnezzar II in the 6th century BC.

In Chapter 5 for the case of early Greece Erika Weiberg, Michael Lindblom, Birgitta Leppänen Sjöberg and Gullög Nordquist present an overview of cultural and social resilience during more than two thousand years of fluctuating environmental circumstances in the Greek Bronze and Iron Ages. This forms the basis

for discussions of four case studies focusing on discontinuities over time and the work of urban minds during periods of heightened societal and environmental stress.

The variety of urbanism in the first millennium BC

In Chapter 6 Frands Herschend and Svante Fischer provide an overview of some of the issues taken up in the third research frame. Consideration is given to “Changing Urbanities: Revision and Radical Critique, Threshold Effects in Urban Society”, and “Resourceful Urbanity Triggering Language Resilience”. The authors stress that, to the urban mind, the urban tends to be a world of its own, created by humans in opposition to the non-urban, nature, the rural, the countryside, the archipelago and so on. The urban mind is aware of two kinds of latent crises threatening urbanity, one resolved by means of remodelling urban life space, social norms and interaction, and a second crisis remedied by means of an ideological change rooted in an understanding of the non-urban. Language interacts with urbanity to become a characteristic outcome as well as a dynamic generator of the urban mind.

In Chapter 7 Behrooz Barjasteh Delforooz explores the evidence for early urbanism in the eastern Iranian plateau along the Helmand River, identifying significant environmental factors which seem to have overwhelmed urban centres and led to a repeated need to relocate the cities.

The perspective on Greek urbanism introduced by Weiberg *et al.* in Chapter 5 is further developed in Chapter 8 by Susanne Carlsson in her treatment of the Greek city-state, or polis, which became the unit that historians could identify with their own societies and focus their historical writing on. Greek history has been shaped to be part of the history of Europe and has not been perceived in a broader Mediterranean context. Starting c. 700 BC, when we have written sources, a sense of Greek culture as being unique and having developed independently of the surrounding world was created. This points to the need of rethinking our claim that ancient Greece alone was the cradle of Western thought and civilization.

A further example of a Greek polis, that of the island of Kos, is provided in Chapter 9 by Kerstin Höghammar who contributes an overview of the 3000-year history of the town and details relating to recorded natural disasters. Particular attention is given to the end of the Hellenistic period, c. 30 BC, and the subsequent incorporation of Kos into the Roman Empire.

In Chapter 10 Svante Fischer, Hans Lejdegård and Helena Victor discuss the 5th-century West Roman imperial residences of Rome and their substitutes Arles and Ravenna, as understood within the framework of an imperialist ideology of urbanism, the “Roman urban mind”. During the late Roman Empire, the city of Rome was the central focus of the old Roman infrastructure. Ideally, the highest echelons of the imperial administration also ought to be located in Rome. There was an underlying idea that the purpose of the Roman Empire was to sustain the city of Rome – the capital of the world – and its ever-growing population. In this paper the authors argue that in spite of the fascination with Rome as the *caput mundi*, urban sustainability and resilience were problematic matters within the

West Roman Empire. The imperial state apparatus proved incapable of resolving these issues in the face of barbarian attacks and internal strife. This spelled the end for the Roman urban mind.

Taking up a focus on Syria in Chapter 11 Witold Witakowski provides a comprehensive regional overview of the Dead Cities area bordering the Syrian Desert. After considering a wide range of factors he finds climate change to be largely responsible for the demise of the urban culture in the area. The Syrian focus is further developed by Mats Eskhult who takes up the role of asceticism in early Christianity in Chapter 12. From the outset, Christianity was disseminated among middle class citizens in cities. Early tracts admonish the Christian town-dwellers to be faithful, modest, and decent and not to indulge in the pagan way of life; but they are not taught to observe any special habits specific to believers, nor are they admonished to shun urban environments. It seems that Christian ascetics initially stayed in their urban environment, but subsequently were expected to flee towns and villages. Nevertheless, proximity to population centres remained vital for sustaining life for anchorites in their hermitages and monks in their monasteries. After the originally free and anarchic asceticism had been brought under control, monasticism was fully accepted and encouraged in the vicinity of population centres. Although the ideal of a life in severe austerity, continence, and retirement from “the world” was widespread and practised by many leaders of the church, the refined Hellenistic urban culture still exercised a deep influence.

The metropolis of Constantinople/Istanbul

Of particular importance for our project has been the focus on Constantinople/Istanbul. This provided a vibrant urban context for the first research meeting and excursion of the Urban Mind project. We have considered different dimensions of this city, the largest of Europe with a current population of more than 25 million inhabitants. From the earliest beginnings of Byzantium to the decision taken by Constantine to establish his city at the mouth of the Bosphorus and forward to today this city provides an incredibly rich tapestry of examples of the workings of the urban mind. Jan Olof Rosenqvist used his time until retirement to introduce us to the complexities of this metropolis.

In Chapter 13 Ewa Balicka-Witakowska has provided a comprehensive overview of the city layout and architecture. This chapter gives an overview of the transformations which took place in Constantinople from the time of its foundation in the early 4th century as a Late Antique metropolis and a magnificent seat of the emperors, to the end of the 7th century when it was changed to a medieval town, perhaps less splendid in some respects but well adapted to new geopolitical and economic circumstances and still the centre of imperial power. In order to present this complicated process, attention has been given to different aspects of the city’s development: organization; use and design of the urban space, both public and private; the elaborate infrastructure, primarily in regard to sustenance and water supply and their sensitivity to climatic changes; the connections to the hinterland; the growing need of improved defence; and last but not least the social and spiritual life of the inhabitants.

The picture emerging from such an approach shows that alongside political and economic transformations the crucial factor responsible for a shift in the general pattern of Constantinople’s urban life was the advancement of Christianity.

The new religion not only gradually dislodged old beliefs and customs but also changed people's mentality, making it difficult for them to understand and appreciate the Classical heritage. It is symptomatic that Constantinople, which was founded with the idea of making it the New Rome, appears at the threshold of the Middle Ages as the New Jerusalem.

In Chapter 14 coverage of Constantinople is continued from another viewpoint with the contribution of John Ljungkvist, Stephan Barthel, Göran Finnveden and Sverker Sörlin who focus on the archaeology and resource utilization strategies which are fundamental for the characteristic resilience of this city. The extensive nature of these networks is realised when one takes into account that much of the food consumed in Constantinople came from as far afield as the Black Sea and the Nile delta in Egypt. Nevertheless the surrounding agricultural production areas are important and the same is true of urban agriculture especially in times of siege. The heathlands on the east side of the Bosphorus which are the focus of parallel projects by the ecologists participating in the Urban Mind project are now understood as expressions of co-evolution under the influence of human plant and animal communities rather than "wild" zones. The question of preservation of biodiversity and maintenance of ecosystem services and a significant horticultural production providing vegetables for the urban population depend on the reservoirs provided by the green areas in Istanbul.

In Chapter 15 Barthel, Sörlin and Ljungkvist provide a thought-provoking theoretical treatment of the Urban Mind in Istanbul in relation to social memory. This chapter uses insights from resilience thinking in analysing a two-thousand-year period of ancient and modern Constantinople, addressing one of the great challenges of the Urban Anthropocene: how to nurture an ecologically sound urbanisation. One of the lessons is that Constantinople maintained a *diversity of insurance strategies* to a greater degree than many historical and contemporary urban centres. It invested heavily not only in military infrastructure but also in systems for supplying, storing, and producing food and water. From major granaries and at least four harbours the citizens could receive seaborne goods, but during sieges the trade networks broke down. At those times, when supplies ran dry, there were possibilities to cultivate food within the defensive walls and to catch fish in the Golden Horn. Repeated sieges, which occurred on average every fifty years, generated a diversity of social-ecological memories – the means by which the knowledge, experience, and practice of how to manage a local ecosystem were stored and transmitted in a community.

Another example of Byzantine urbanism, namely that of Mistra, is taken up by Gullög Nordquist in Chapter 16. Mistra (or Mystras) is a fortified medieval town on the slopes of Mount Taygetos in Laconia (Lacedaemonia), near ancient Sparta. In AD 1205 it became the seat of the Latin Principality of Achaia that was established after the conquest of Constantinople during the Fourth Crusade. The strong castle, built in 1249 on the top of the rocky hill, was, according to the *Chronicle of Morea*, the most beautiful in the Peloponnese.

In Chapter 17, completing our coverage of Istanbul, Éva Csató Bernt Brendemoen, Lars Johanson, Claudia Römer and Heidi Stein analyse the 17th-century linguistic landscape of Istanbul showing clearly the transforming effects upon linguistic codes of immigrant groups imposed by the exigencies of organizing this huge city. This chapter studies the urban linguistic environments of Istanbul after the historical shift brought about by the Ottoman conquest in 1453. The focus is on the 17th century, when the population doubled – presumably

because of climate changes in Anatolia – and Turkic-speaking groups became dominant. Nevertheless, the town accommodated a multitude of interacting linguistic codes, that is, languages and dialects, both social and functional varieties. This multilayered linguistic ecological system was mapped out on the thoroughly designed space syntax of the largest urban centre of the time. Distinctive features ensuring sustainability of the linguistic codes in this prenational urban setting are outlined. For instance, the absence of normative measures implies that codes were used in complementary functions and no single code was offered or claimed to be used in all domains of communication. It is notable also that cultural and linguistic diversity is also supported in the green zones as they are used by transient Roma communities. Many aspects of these questions are under pressure from the dynamic development of the metropolis and ironically enough even from urban renewal programmes attendant upon Istanbul being named as the cultural capital of Europe 2010.

Further linguistic contributions

In broadening the scope of the volume to include linguistics we have all benefited from the insights into communication and urbanism. In the words of Christiane Schaefer in Chapter 18: “Cities are places of ethnic and linguistic diversity, and thus of language contact. This is illustrated by the oasis city-states along the Silk Roads in Central Asia that developed into cosmopolitan centres of an amazing religious, ethnic and linguistic diversity during the first millennium AD. The growing trade on the Silk Roads, the shifting political, religious and military domination, the missionary activities, and last but not least the climatic changes led to increasing immigration into the cities, creating a multilayered linguistic ecological system of interacting spoken and written codes. A flourishing written culture developed; and the rich activity of urban cross-cultural exchange is not only reflected in art and architecture, but also in a vast variety of texts and manuscripts translated and annotated in more than twenty different languages and nearly as many different scripts.” An ecolinguistic study of Tocharian – one of the lesser known tongues of the Turfan and Kucha area along the northern route of the Silk Road – taking into account status, internal variation, domains of usage, concurrent codes and language contact, reveals one aspect of an “urban mind”: namely, the efforts and success of city dwellers to tackle communication in the multilingual settings of the city.

Similarly in Chapter 19 Carina Jahani draws inspiration from her consideration of Balochi oral and written literature and poetry to reassess the influence of the urban mind in south-eastern Iran. The purpose of her contribution is to compare themes in Balochi written literature with those found in Balochi oral literature in search for an “urban mind”. The Balochi language is spoken in south-western Pakistan and south-eastern Iran, as well as by smaller populations outside Balochistan proper.

Global perspectives

In the final section of the volume the scholarly focus is broadened to include a range of examples from the Americas, Europe, Southeast Asia and Africa. The

intention here is to demonstrate the multiplicity of forms of expression of the Urban Mind and to remind the reader that we are dealing with a diverse set of urban traditions.

In Chapter 20 Neil Price provides further theoretical rigour to the Urban Mind concept. He argues that the end of the medieval European urban trajectory arguably lies with the mercantile expansion of the Elizabethan and Jacobean periods. In this context, he examines the early colonial ventures on the eastern seaboard of North America, and what would become the first permanent English settlement in the New World. When ships from London arrived in Virginia they encountered sophisticated tribal federations like the Powhatan, living in large, defended settlements embedded within extensive trade networks. While archaeologists are accustomed to studying these sites through models of village life, it is argued here that they can also be fruitfully approached through the urban sensibilities of the colonists. Significantly, from the very beginning the English labelled their tiny fort *Jamestowne*, and showed no hesitation in applying the same linguistic elevation to the surrounding indigenous centres. They also believed that this urban perception was shared by the Native Americans. A case study of Nouvelle France, the extended settlement along the St. Lawrence River based around Québec, reveals in some ways the opposite picture in a colonial encounter that saw entire indigenous nations denigrated as 'villages'. Such dislocations between different groups of Europeans illuminate the widely varying cognition of urban and non-urban space in the North American colonies.

Charlotta Hillerdal in Chapter 21 addresses early urbanism in Scandinavia. The Viking Age towns of the 8th century are usually placed within a long-established interpretative framework that sees them as the first step in a continuous process of urbanisation. This development was connected to strengthened royal power and state formation, despite the fact that the towns were abandoned towards the end of the Viking Age. Hillerdal introduces an alternative approach to this development and suggests that the abandonment of the towns was an ideological necessity. It was not spurred by the uplift of land or diverted trade routes as previously suggested, but by the impossibility of converting the identity of the towns to the new political order displayed by a strengthened royal power emerging around the turn of the first millennium. The *town relocation process* of development should thus not be seen as a natural chain of advancement and evolvement of functions, but as an expression of conflicting politics.

Christian Isendahl in Chapter 22 points out that urbanism is a global phenomenon with considerable time-depth. In most regions of the world, people have for more than a millennium organized their settlements in ways that in some sense can be recognized as distinctly urban. Different urban histories have given rise to a remarkable spatial diversity and temporal variation viewed at the global and long-term scales, though this is often overlooked in urban scholarship. Recent and ongoing archaeological research demonstrates that many pre-industrial urban settlements in several different regions can be characterized as "low-density cities". In this chapter the author discusses some methodological and theoretical issues in the investigation of pre-industrial, low-density cities, focusing on the pre-Hispanic Maya lowlands of Mesoamerica. The author argues that land-use strategies that intimately inter-finger agricultural production with functions more commonly associated with urbanism can account for the relatively dispersed distributional pattern of architecture in Maya settlements. The present contribution intends to draw attention to pre-industrial, low-density cities as an important category

of global urbanism and particularly to the phenomenon of urban farming as a pertinent feature in long-term human history. The data from the Maya lowlands indicate that agricultural production is not, as often implied, the antithesis of urbanism, but to the contrary often an urban function.

Anna Karlström's contribution in Chapter 23 discusses the challenges of defining the urban mind in a Southeast Asian context, with specific focus on Vientiane, the capital of Laos. Today, Vientiane is among the smallest of the Asian capitals with a population of approximately 500 000 people. From an archaeological perspective, Vientiane has been an urban site for more than a thousand years, and it was one of the main urban centres in mainland Southeast Asia 500 years ago when it served as the capital of the great Lan Xang kingdom. With its double character – global in a historical perspective and local in a contemporary perspective – Vientiane is here used to illustrate the structure and complexity of Southeast Asian urban sites and the connection between spatial/temporal organisation and urbanism.

In Chapter 24 Munyaradzi Manyanga, Innocent Pikirayi and Shadreck Chirikure point out that there was “a well-rooted perception within the colonial mindset that Africa was quintessentially rural in character. This situation was nurtured by a Eurocentric conceptualization of urbanism.” In situations where African towns and cities conformed to European traits, these were attributed to foreign colonization or external trade with the outside world. There has also been increasing concern about the archaeological identity of African urbanism, given that the baseline definitions were Western derived. Mapungubwe and Great Zimbabwe, the first major towns in pre-European southern Africa, remain poorly understood and “there is scant information on the internal and regional dynamics of these centres and the settlement constellations or hierarchies they presided over. The narratives of these places, as with so many other towns on the Zimbabwe plateau and in the adjacent Shashe-Limpopo basin, are centred in the courts of kings and nobles whose power was felt in territories beyond. We need to rethink beyond these royal courts to fully understand the development and character of these urban centres in southern Africa.”

Finally, in Chapter 25 Paul Sinclair analyses the background to the development of urbanism on the Zimbabwe plateau in terms of multi-scalar regional and landscape perspectives using GIS (Geographical Information Systems). Urbanism is conceptualized as a cognitive phenomenon, the urban mind, and viewed in terms of deep time interactions between ideology and governance, local and inter-regional production and exchange systems and resource availability, as well as responses to the effects of climate change. In addition to the dynamics within the farming communities of the last 2000 years, consideration is given to mid-Holocene hunter-forager settlement systems previously excluded from discussion of settlement aggregation. Specific attention is given to changes and continuities in settlement preference in relation to soils as well as variability in temperature and precipitation. Crucial challenges of integrating the archaeological and paleoenvironmental record into discourse on modern and sustainable development on the Zimbabwe plateau are raised as priorities for future research.

The focus of this chapter is not an academic understanding of the past; rather, an attempt is made here to point the way in which knowledge of past settlement systems on the Zimbabwe plateau might contribute to new thinking about the future of sustainable urban settlement systems in south central Africa and elsewhere. The global community is facing significant economic, political and

environmental crises at the beginning of the 21st century, and they show no sign of abating.⁹ Issues concerning settlement aggregation and urbanism are centrally important for the future well-being of people living on the Zimbabwe plateau and indeed elsewhere on the continent. More than two thirds of Africa's population will live in urban agglomerations in the coming few decades.¹⁰ The ultimate aim of the approach used here is therefore to encourage archaeologists and other social scientists to contribute actively together to a broadly based societal assessment of long-term strategies for maintaining sustainable settlement systems in the region. The collective democratic engagement of civil society institutions and urban residents will significantly alter the urban mind, taken here as the sum total of perceptions of all participants in the urban experience, and encourage changes in the structures of governance and attitudes to biodiversity and natural resource management.

Concluding remark

We are now in the age of the Anthropocene in which the effects of human action upon our environments are increasingly discernable in the working of the earth system. In reorienting our efforts as archaeologists from the past towards the future we find we are not alone in this endeavour as new constellations of natural and social scientists are demonstrating their capacity to implement joint approaches in analysing questions of global concern.

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The team in Uppsala had an excellent beginning with the organizing abil-

⁹ Costanza *et al.* 2007a.

¹⁰ *UN Habitat* 2009.

ity of Dr Erika Weiberg who handled arrangements for the meeting in Istanbul also produced the Urban Mind newsletter keeping participants updated. Dr Christian Isendahl has continued with the daily project information management. The establishment of the World Historical Ecology Network (WHEN) has contributed significantly to the discussion climate. Christian Isendahl has commented on many of the chapters and has handled all the illustrations for the volume. Throughout the project Ms Elisabet Green has kept excellent control of the financial reporting and coordinated travel arrangements. In the later periods involving book production she has played a key role in harmonizing the formats of the different chapters. Laura Wrang has patiently corrected and in one case re-corrected the English texts of all of the chapters. Dr Anton Johnston helped with the proof reading. Dr Karl Johan Lindholm and Dr Daniel Löwenborg both provided timely support for spatial analysis and GIS applications. Grateful acknowledgement is made to Fredrik Tobin for giving permission to publish the plate used in the preface. Permission was granted by the National Museum Stockholm to use the cover illustration. Thanks are due to Johan Heldt for arranging this. Throughout the Urban Mind project Professor Olof Pedersén has helped to maintain an excellent level of cross faculty communication.

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1. Climate Variability in the Eastern Mediterranean and the Middle East during the Holocene

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ABSTRACT

The authors review the climate evolution over approximately the last 11 500 years (the Holocene) in the Eastern Mediterranean and the Middle East. Published papers and data series are analysed and compiled in order to reveal spatial and temporal patterns in humidity and temperature changes. The results are discussed and the last 6000 years are presented in a series of coloured maps of 200-year time slices. The pattern of the regional climate evolution and variability is far from clear, although a fairly good number of paleoclimatic records do exist. The ambiguity may be owing to the fact that different records from the same region show different climate signals, that the same kind of proxy data are interpreted differently, or that different records have different time resolution and varying precision in age models. Further, large areas are totally void of paleoclimatic records, and especially noticeable are the important archaeological areas of Mesopotamia and Egypt. Keeping this ambiguity in mind, the authors propose a tentative synthesis of the regional climate evolution.

Most of the records conform with the general picture of a smooth transition from a wetter early Holocene to a drier late Holocene, an evolution that is well explained by the insolation changes in the northern hemisphere. Within the last 6 000 years the period 4000–3400 BC was the wettest, and 3400–2600 BC was still wetter than average but less wet in comparison to the previous period. Dry conditions were well established by 2600 BC and lasted until at least AD 600. From AD 600 and onwards the very few records available hamper any firm conclusions. Data showing changes in temperature are fewer than data showing changes in humidity, and the data that are available indicate that the mid-Holocene was cooler than the late Holocene and that the period 400 BC–AD 400, encompassing the Roman period, had warmer than average temperatures over the last 6 000 years. There is a fairly clear climate gradient between the Eastern

Mediterranean and the Middle East, where sub-regions sometimes experience opposite humidity conditions. This is typical for a region situated at the border of two major climate systems, and it calls for caution when comparing spatially dispersed climatic and societal data sets. Short-lived but rapid climatic events are of considerable relevance to archaeologists. It is, however, still too early to draw far-reaching conclusions about possible rapid climatic events contributing to the fall of old states. More precisely dated and precisely interpreted locally derived paleoclimatic data are needed to test such relationships. The number of paleoclimatic records, particularly in areas with good archaeological data, needs to be increased. New data should preferably be extracted from proxy data that are less affected than pollen by human activity, for example stable isotope records. It is also essential to reduce the uncertainties in the proxy-based climate records and to improve our understanding of how proxies respond to changes in environmental variables.

Introduction

The Eastern Mediterranean and Middle East region is the cradle of great civilizations and empires and thus a highly important archaeological region. The historical processes of urbanism in this region are often described as being closely related to climate and environmental changes. The present Mediterranean climate is defined by mild, wet winters and hot, dry summers. The high temperatures in summer cause a great decrease in humidity, through evaporation, which creates water stress in much of the region and which has great implications for human activities. For the future, the Mediterranean region is predicted to experience even warmer and drier summers.¹

The growing awareness of global warming and the potential implications that climate change will have on societies have inspired scholars with a historical perspective to try to demonstrate past links between climate change and the collapse of societies, including cases from the Mediterranean, in order to learn for the future.² These efforts can be seen as complementary tools to climate-prediction models, whereby a better knowledge of past climate-society interactions may help us to develop suitable strategies for adapting to change. However, many of the studies available rest on an imbalance between the spatial and temporal scales, and between the quality and character of the climate time series on the one hand and the archaeological and historical information on societal development on the other. In order to further explore the climate-environment-society interactions in a region, and to avoid simple environmental or cultural determinism, more detailed studies are needed on regional climatic trends, long-term as well as short-term, and on societal development at local to regional levels. Only then can firm conclusions be drawn about the relation between climate variability and societal development.

The aims of this chapter are:

1 IPCC 2007.

2 Tainter 2000; Diamond 2005.

- To provide a synthesis of the current views on the climate and its variability during the Holocene (i.e. the last 11500 years or so) in order to provide a readily available source of information for archaeological research and other fields.
- To point out limitations and uncertainties in available climate data records and to highlight gaps in the current research.

The geographical focus is on the eastern part of the Mediterranean Sea and the surrounding land masses. This region can roughly be defined as covering the area between 10°E to 60°E and 20°N to 45°N.

Current climate

The present Mediterranean climate is controlled by the seasonal movement of the northern westerlies, which leads to wet and mild winters, and by the sub-tropical highs, which give hot and dry summers. Weather patterns display clear spatial variations with decreasing precipitation and increasing evaporation towards the east, resulting in a greater water deficit in the eastern part of the region. The north is generally more humid than the south as it is more strongly influenced by moister Atlantic air flows, especially during the winter. The topography plays an important role for local precipitation; for example, mountain slopes facing towards the west receive substantially more precipitation than slopes facing east. Additionally, the climate variability is affected by a number of large- and small-scale climate oscillations operating on various temporal and spatial



Fig. 1. Map of the Eastern Mediterranean and the Middle East. Black squares, with supplementary ID numbers, indicate the position of published paleoclimatic records. ID numbers can be found in Table I with further information and full references.

scales, such as the North Atlantic Oscillation, the El Niño Southern Oscillation, the Mediterranean Oscillation, and the North Sea-Caspian Pattern.³

Methods

Published peer-reviewed articles on paleoclimatic records from the region were retrieved and reviewed. Information on location, dating technique, time span covered, temporal resolution, proxy⁴ type, general uncertainties (e.g. measurement uncertainty), and suggested climate interpretations were recorded (*Fig. 1, Table 1*). The final selection of paleoclimatic records for our synthesis was essentially qualitative and based on a set of criteria that included high dating reliability, high time resolution, small levels of uncertainties, and one or preferably several unambiguous proxies. Preference was given to records fulfilling the above criteria and covering the full Holocene. This implies that the few available dendroclimatological records are excluded as they only cover shorter time periods; moreover, although the tree-ring records show year-to-year variability, the long-term climatic trends are lost in the standardisation method used and therefore these records are of little value for the present synthesis. A further important criterion was to cover the entire region and to include records from all over the Eastern Mediterranean basin. The paleoclimatic records answering to the listed criteria were downloaded from either NOAA or Pangaea databases.⁵ If the record in question was not available online the author or authors were contacted and asked to provide the data.

A more detailed analysis of data covering the last 6000 years was performed in order to study spatial and temporal variability and to illuminate uncertainties and limitations in available data. The selected period has a generally stable and comparable climate forcing effect, which means that the average value will not be influenced by precessional forcing of the equinoxes to any great extent and hence shorter-term (millennial-centennial) climate variability may be highlighted. Proxy time series interpreted to show relative changes in temperature and precipitation were replotted and compared (*Figs. 2, 3*). An average value of the proxy in question was calculated for the last 6000 years, if possible, otherwise as late into the Holocene as possible depending on the length of the time series. The 6000-year-long period was divided into thirty 200-year time slices. The analysis of proxy values in relation to average values was divided into three classes: below average, average, and above average in each of the 30 time slices. The three classes were converted to a colour code system to visually present spatial and temporal patterns. Colour codes were marked as colour dots on maps representing each 200-year time slice (*Fig. 4*).

Results and synthesis

The review work generated a compilation of 80 published paleoclimatic proxy records and 10 reviews, covering a range of different dating methods and proxy

3 Trigo *et al.* 1999; Xoplaki 2002; Kutiel *et al.* 2002; Dünkeloh and Jacobeit 2003; Raicich *et al.* 2003; Rohling *et al.* 2009.

4 Proxy means a natural archive that contains information on past climate such as relative temperature and precipitation, which can be extracted through various kinds of chemical, physical, and biological analyses of the archive.

5 <http://www.ncdc.noaa.gov/paleo/> <http://pangaea.de>

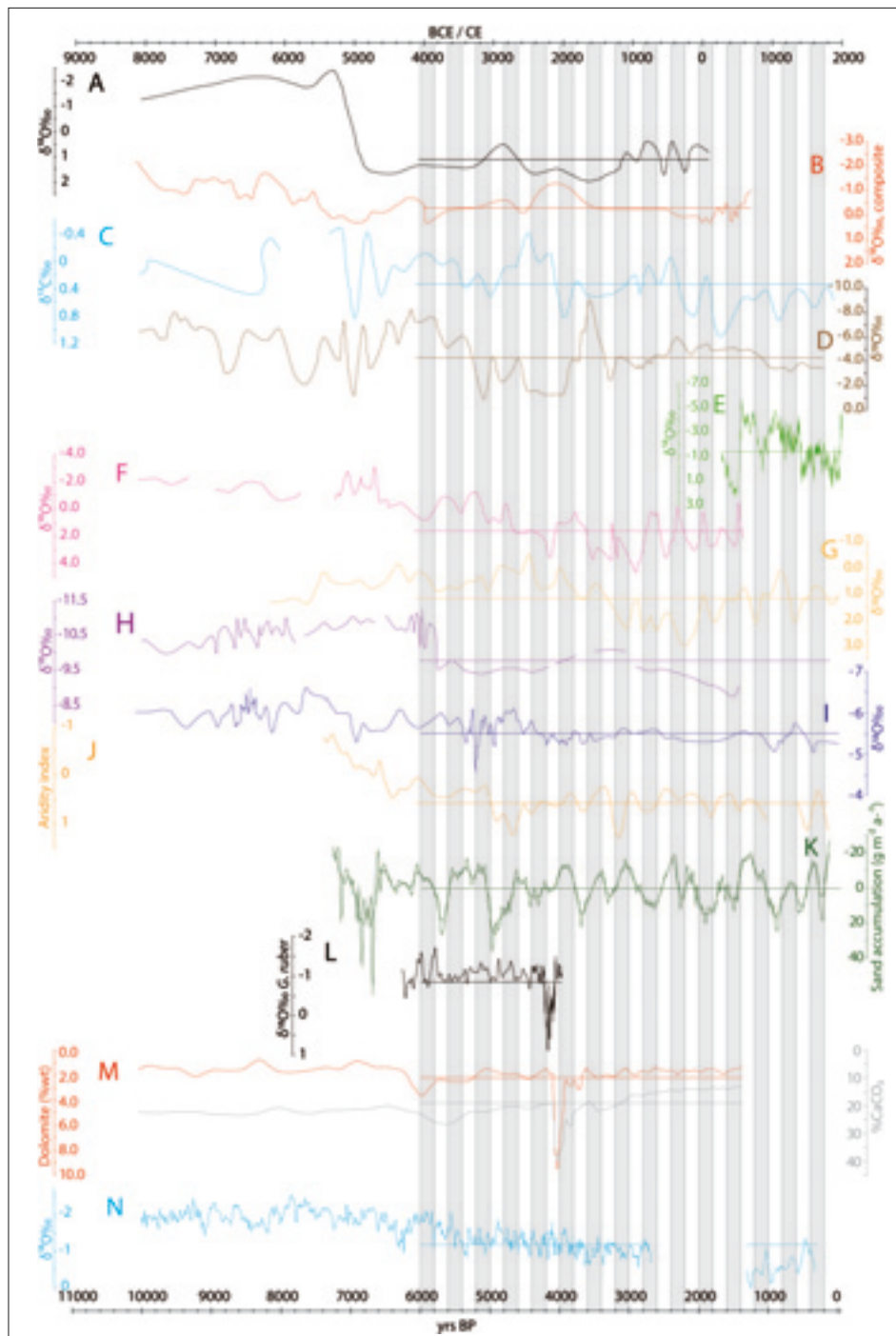


Fig. 2. Collection of proxy-based paleoclimatic data showing wetter (up) and drier (down) conditions. Grey bars mark the 200-year periods used for the spatial analysis. Horizontal black bars in graphs show calculated average proxy value for the period 6000–0 yrs BP. A. Italy, Zanchetta *et al.* 2007, after Roberts *et al.* 2008; B. Greece, Frogley *et al.* 2001; C. Aegean Sea, Kuhnt *et al.* 2008; D. Turkey, Eastwood *et al.* 2007; E. Turkey, Jones *et al.* 2006; F. Turkey, Roberts *et al.* 2001; G. Turkey, Wick *et al.* 2003; H. Lebanon, Verheyden *et al.* 2008; I. Israel, Bar-Matthews *et al.* 2003; J. Red Sea, Arz *et al.* 2003 (GeoB5804-4); K. Red Sea, Lamy *et al.* 2006 (GeoB5804-4); L. Red Sea, Arz *et al.* 2006; M. Arabian Sea, Cullen *et al.* 2000; N. Oman, Fleitmann *et al.* 2003.

types from which information and data were extracted (Table 1, Fig. 1). Most of the records report changes in relative humidity and only a few in relative temperatures. Fifteen records provide quantitative estimates of temperature but only a few of precipitation.

Table 1. A list of reviewed paleoclimatic records from the Eastern Mediterranean and Middle East. Map IDs correspond to geographical positions in Fig 1. The following information is recorded from the original reference: i) Site type: M = Marine, T = Terrestrial, L = Lacustrine; ii) Location, coordinates (* no coordinates in paper, or obviously erroneous, site location estimated in Google Earth); iii) Proxy type(s) and interpretation: P = Pollen, MP = Multi proxy, GM = Geomorphology, S = Sedimentology, F = Foraminifera, O = Ostracods, U₃₇k' = Alkenone, L/L = Lake level, C = Charcoal, MS = Magnetic susceptibility, CR = Climate reconstruction, T = Temperature, prec = Precipitation, evap = Evaporation, SST = Sea surface temperature, SSS = Sea surface salinity, δ -symbol = stable isotopes of oxygen and carbon; iv) Time period covered; v) Dating technique; and vi) Time resolution. Resolution data marked with an asterisk are approximations. Estimations of the resolution (resolution range) have been calculated from sample number/density and age models. This simplification of the true values gives an idea of record resolutions.

Map ID	Site type	Location	Coordinates ⁱ	Proxy (and interpretation where applicable)	Time interval (cal. yrs BP if nothing else stated)	Dating technique	Resolution ²	Reference
1	L	Italy	N42°34' E11°51'	P, MS	~100 000-0	¹⁴ C AMS Tephra	n.a. 4-8 cm (Holocene)	Magri, 1999
2	T	Italy	N45°37' E13°53'	$\delta^{18}\text{O}$ (T), $\delta^{13}\text{C}$	~17 000-0	U-Th	18-123 yrs	Frisia <i>et al.</i> , 2005
3	L	Italy	N37°31' E14°28'	$\delta^{18}\text{O}$ (prec/evap), $\delta^{13}\text{C}$	~28 000-20 000, ~12 500-0	¹⁴ C AMS and MS correlation	*160-1000 yrs	Zanchetta <i>et al.</i> , 2007
3	L	Italy	N37°31' E14°28'	P, MS	~11 000-0	¹⁴ C AMS, Tephra	*80-350 yrs (after ID:5)	Sadori and Narcisi, 2001
3	L	Italy	N37°31' E14°28'	$\delta^{18}\text{O}$ (prec/evap), $\delta^{13}\text{C}$, P	~20 000-0	¹⁴ C AMS, Tephra	*100-1000 yrs	Sadori <i>et al.</i> , 2008
4	L	Italy	N40°11' E18°26'	P and R	~5 500-0	¹⁴ C AMS	*70-200 yrs	Di Rita and Magri, 2009
5	M	Adriatic Sea	N40°52' E18°38'	CR: U ^k ₃₇ (SST)	~11 500-2 000	¹⁴ C AMS	60-440 yrs	Giunta <i>et al.</i> , 2003
5	M	Adriatic Sea	N40°52' E18°38'	MP: F, P	~11 500-1 500	¹⁴ C AMS	*60-500 yrs	Sangiorgi <i>et al.</i> , 2003
6	M	Adriatic Sea	N42°40' E15°40'	MP: P, MS, S, CR: U ^k ₃₇	~7 000-0	¹⁴ C AMS	*25-400 yrs	Oldfield <i>et al.</i> , 2003
7	M	Adriatic Sea	Adriatic Sea Multiple cores	$\delta^{18}\text{O}$, $\delta^{13}\text{C}$, F	~6 000-0	¹⁴ C AMS	*110-500 yrs	Piva <i>et al.</i> , 2008
8	M	Tyrrhenian Sea	N38°31' E13°25' Multiple cores	F, $\delta^{18}\text{O}$, CR: U ^k ₃₇ (SST)	~25 000-0 and ~15 000-0	¹⁴ C AMS	100 yrs	Sbaffi <i>et al.</i> , 2001, 2004
9	M	Tyrrhenian Sea	N40°29' E14°42'	CR: P	~35 000-0	¹⁴ C AMS	*250-500 yrs	Di Donato <i>et al.</i> , 2008
10	M	Strait of Sicily	N37°04' E13°19' Core 78SL	CR: U ^k ₃₇ (SST)	~11 000-0	¹⁴ C AMS	30-490 yrs	Emeis <i>et al.</i> , 2003
11	T	Tunisia	N33°25' E10°51'	S, P, C	~1 650-0	Tephra	8 yrs	Marquer <i>et al.</i> , 2008

12	M	Ionian Sea	N36°45' E17°43' Core RL11	CR: U ₃₇ ^k (SST) $\delta^{18}\text{O}$ (SSS)	~16 000-0	¹⁴ C AMS	110-290 yrs	Emeis <i>et al.</i> , 2000
13	T	Romania	N44°43' E21°45'	$\delta^{18}\text{O}$ (T), $\delta^{13}\text{C}$	~11 000-2 400	U-Th	40-150 yrs	Constantin <i>et al.</i> , 2007
14	L	Albania	*N40°56' E20°45'	MP: P, Di, S	~40 000-0	¹⁴ C AMS	*30-500 yrs	Wagner <i>et al.</i> , 2009
15	L	Albania	N40°46' E20°47'	CR: P (Prec, T)	~16 000-0	¹⁴ C AMS	50-200 yrs	Bordon <i>et al.</i> , 2009
16	L	Greece	N38°52' E20°50'	P	~10 000-0	¹⁴ C AMS	n.a. 2-8 cm	Jahns <i>et al.</i> , 2005
17	L	Greece	N39°45' E20°51'	MP: P, S, MS	~25 000-0	¹⁴ C AMS	*150-350 yrs	Lawson <i>et al.</i> , 2004
17	L	Greece	N39°45' E20°51'	O, $\delta^{18}\text{O}$ (prec/evap), $\delta^{13}\text{C}$	~500 000-1 200	¹⁴ C AMS	*35-1000 yrs	Frogley <i>et al.</i> , 2001
18	L	Greece	N40°49' E21°55'	MP: P, S	~20 000-0	¹⁴ C AMS	*500-125 yrs	Lawson <i>et al.</i> , 2005
19	L	Greece	*N38°15' E22°06'	P	~6 000-0	¹⁴ C AMS	n.a.	Kontopoulos & Avramidis, 2003
20	L	Greece	*N39°03' E22°15'	S (L/L)	~40 000-0	¹⁴ C AMS	n.a.	Digerfeldt <i>et al.</i> , 2007
21	L	Greece	N37°30' E22°35'	P	~5 700-0	¹⁴ C	n.a.	Jahns <i>et al.</i> , 1993
22	L	Greece	N41°10' E22°42'	P	~5 000-0	¹⁴ C	n.a. 10 cm	Athanasiadis <i>et al.</i> , 2000
23	M	Aegean Sea	N39°45' E24°05' Core SL148	MP: F, $\delta^{18}\text{O}$, $\delta^{13}\text{C}$. (Stratification, wet/dry)	~22 000-0 and 12 000-0	¹⁴ C AMS	150-160 yrs	Kuhnt <i>et al.</i> , 2007; 2008
23	M	Aegean Sea	N39°45' E24°05' Core SL148	S	~22 000-0	¹⁴ C AMS	150-180 yrs	Ehrmann <i>et al.</i> , 2007
24	M	Aegean Sea	N36°32' E24°12'	MP: $\delta^{18}\text{O}$, P, S, CR: F (SST)	~48 000-0	¹⁴ C AMS	450 yrs	Geraga <i>et al.</i> , 2005
25	M	Aegean Sea	N40°05' E24°37' Core SL152	CR: P (TANN, PANN)	~10 400-4 500	¹⁴ C AMS	30-140 yrs	Kotthoff <i>et al.</i> , 2008b
25	M	Aegean Sea	N40°05' E24°37' Core SL152	P and review	~28 300-0	¹⁴ C AMS	125-300 yrs	Kotthoff <i>et al.</i> , 2008a
26	M	Aegean Sea	*N39°09' E24°59'	S, CR: U ₃₇ ^k (SST)	~22 300-5 500 (CR: 15 000- 1 000)	¹⁴ C AMS	*30-1300 yrs (only SST)	Gogou <i>et al.</i> , 2007
27	M	Aegean Sea	N35°39' E26°34'	$\delta^{18}\text{O}$ (SSS) F (SST)	~13 000-1 500	¹⁴ C AMS	125 yrs	Rohling <i>et al.</i> , 2002

27	M	Aegean Sea	N35°39' E26°34' LC21	δ ¹⁸ O, CR: F (SST)	~12 500-4 100	¹⁴ C AMS	Multi-decadal to centennial	Marino <i>et al.</i> , 2009
28	M	Aegean Sea	N36°38' E27°00'	MP: P, F, CR: ³⁷ U ^k (SST)	~12 500-3 000	¹⁴ C AMS, tephra	50-450 yrs	Triantaphyllou
29	M	Marmara Sea	N40°50' E27°45' SW Black Sea	δ ¹⁸ O (SSS), CR: ³⁷ U ^k (SST)	~13 700-0	¹⁴ C AMS	60-530 yrs	Sperling <i>et al.</i> , 2003
30	M	Black Sea	Multiple cores	P	~30 000-0	¹⁴ C	*45-200 yrs (one core)	Mudie <i>et al.</i> , 2007
31	M	Black Sea	N41°27' E31°04' N41°32' E31°10'	Clay layers (prec)	~7 500-0	¹⁴ C AMS	20-30 yrs	Lamy <i>et al.</i> , 2006
32	L	Turkey	*N37°29' E27°29'	P	~6 000-0	¹⁴ C AMS	n.a.	Knipping <i>et al.</i> , 2008
33	L	Turkey	N37°08' E29°36'	MP: δ ¹⁸ O (prec/evap), δ ¹³ C, CR: P (prec)	~10 500-0	¹⁴ C Tephra	15-295 yrs	Eastwood <i>et al.</i> , 1999, 2002, 2007
34	T	Turkey	N37°32' E30°17'	P, S, C	~3 500-1 400	¹⁴ C AMS	2-40 yrs	Kaniewski <i>et al.</i> , 2007; 2008a
35	T	Turkey	N37°35' E30°24'	MP: P, S	~2 750-0	¹⁴ C AMS	*Average 30-100 yrs	Vermoere <i>et al.</i> , 2000; 2002a
36	L	Turkey	N38°22' E34°27'	P	~1 700-0	Varve counts, ²¹⁰ Pb and ¹³⁷ Cs dating	18 yrs	England <i>et al.</i> , 2008
36	L	Turkey	N38°22' E34°27'	δ ¹⁸ O (prec/evap)	~1 700-0	Varve counts, ²¹⁰ Pb and ¹³⁷ Cs dating	1-5 yrs	Jones <i>et al.</i> , 2006
36	L	Turkey	N38°22' E34°27'	C (fire history)	~16 000-0	See ID:38		Turner <i>et al.</i> , 2008
37	L	Turkey	N38°33' E34°33'	MP: δ ¹⁸ O (prec/evap), δ ¹³ C, Di	~16 000-0	¹⁴ C U-series	*10-250 yrs	Roberts <i>et al.</i> , 2001
38	T	Turkey	N37°13' E38°55'	δ ¹⁸ O (T), δ ¹³ C	~10 000-4 000	¹⁴ C	*170-340 yrs	Pustovoytov <i>et al.</i> , 2007
39	L	Turkey	N38°32' E42°48'	MP: δ ¹⁸ O (relative humidity), Mg/Ca (salinity)	~12 700-0	Varve counts and ¹⁴ C	*10-250 yrs	Wick <i>et al.</i> , 2003
40	T	Syria	N35°22' E35°56'	P	~4 100-2 500	¹⁴ C AMS	*26 yrs and better	Kaniewski <i>et al.</i> , 2008b
41	T	Syria	*N35°47' E36°47'	δ ¹³ C	~4 500-3 350	¹⁴ C	n.a.	Fiorentino <i>et al.</i> , 2008

42	T	Lebanon	*N33°58'E35°37'	$\delta^{18}\text{O}$ (prec), $\delta^{13}\text{C}$	~12 000-1 000	^{14}C -Th	10-180 yrs	Verheyden <i>et al.</i> , 2008
43	M	Levantine Sea	N34°04'E32°43' Core 967	$\delta^{18}\text{O}$ (SSS), CR: U^{k}_{37} (SST)	~16 000-0	Correlation with RL11, ID14	*90-800 yrs	Emeis <i>et al.</i> , 2000
44	M	Levantine Sea	N31°56'E34°22'	MP: $\delta^{18}\text{O}$ (SSS), $\delta^{13}\text{C}$, S	~3 600-0	^{14}C AMS	50-100 yrs	Schilman <i>et al.</i> , 2001, 2002
45	T	Israel	N31°27'E35°01'	$\delta^{13}\text{C}$, CR: $\delta^{18}\text{O}$ (prec)	~185 000-0	^{14}C -Th	*5-250 yrs	Bar-Matthews <i>et al.</i> , 1997, 1999, 2003, 2004
45	T	Israel	N31°27'E35°01'	$\delta^{18}\text{O}$ (prec)	~2 150-850	^{14}C -Th	Sub-annual	Orland <i>et al.</i> , 2009
46	T	Israel	*N31°04'E35°23'	$\delta^{13}\text{C}$ (prec), $\delta^{15}\text{N}$ (prec)	~4 215-3 880	^{14}C AMS	*Average 3 yrs	Frumkin <i>et al.</i> , 2009
47	L	Israel	N31°20'E35°24'	P	~4 000-700	^{14}C AMS	*Average 50 yrs	Neumann <i>et al.</i> , 2007a
48	L	Israel	*N31°34'E35°28'	S (L/L)	~4 000-0	^{14}C AMS	*Average 90 yrs	Bookman <i>et al.</i> , 2004
48	L	Israel	*N31°34'E35°28'	S (L/L)	~10 000-0	^{14}C AMS	*Average 250 yrs	Migowski <i>et al.</i> , 2006
49	L	Israel	N33°15'E35°4'	CR: P (T, prec)	~6 500-0	^{14}C AMS	*Average 50 yrs	Neumann <i>et al.</i> , 2007
50	T	Jordan	N30°37'E35°29'	P, S, MS	~9 000-0 Discontinuous	^{14}C AMS	n.a.	Hunt <i>et al.</i> , 2007
51	M	Red Sea	N27°43'E34°41' Core GeoB5844-2	MP: $\delta^{18}\text{O}$ (SSS), CR: U^{k}_{37} (SST), S	~10 000-0	^{14}C AMS	25-300 yrs	Arz <i>et al.</i> , 2003
52	M	Red Sea	N29°30'E34°57' Core GeoB5804-4	MP: $\delta^{18}\text{O}$ (SSS), S	~10 000-0	^{14}C AMS	25-300 yrs	Arz <i>et al.</i> , 2003
52	M	Red Sea	N29°30'E34°57'	$\delta^{18}\text{O}$, S	~7 500-0	^{14}C AMS	20-30 yrs	Lamy <i>et al.</i> , 2006
53	M	Red Sea	N26°13'E35°22'	MP: $\delta^{18}\text{O}$ (SSS) U^{k}_{37} (SST)	~5 900-3 900	^{14}C AMS	*6-30 yrs	Arz <i>et al.</i> , 2006
54	M	Red Sea	3 adjacent cores. Core MC93: N19°59'E38°13'	F (stratification, wet/dry)	~6 000-0	^{14}C AMS	*170-500 yrs	Edelman-Furstenberg <i>et al.</i> , 2009
55	L	Iran	N35°32'E46°07'	Macrofossils, Di, P	~26 000-1 000	^{14}C , one AMS	*multi-centennial	Wasylikowa <i>et al.</i> , 2006

55	L	Iran	N35°32'E46°07'	MP: $\delta^{18}\text{O}$ (prec), $\delta^{13}\text{C}$, P	~13 000-1 000	^{14}C	* multi-centennial	Stevens <i>et al.</i> , 2001
56	L	Iran	N33°05'E47°43'	MP: $\delta^{18}\text{O}$ (prec), $\delta^{13}\text{C}$, P	~10 000-0	^{14}C AMS	* multi-centennial	Stevens <i>et al.</i> , 2006
56	L	Iran	N33°05'E47°43'	O (L/L), S	~10 000-0	^{14}C AMS	* multi-centennial	Griffiths <i>et al.</i> , 2001
57	T	UAE	*N25°41'E56°01'	MP: P, S, phytoliths	(18 000) 8 500-0	^{14}C AMS	* multi-centennial	Parker <i>et al.</i> , 2004; 2006
58	T	Oman	N17°07'E54°05'	$\delta^{18}\text{O}$ (prec)	CE 1220-2000	U-Th	1.2-1.4 yrs	Fleitmann <i>et al.</i> , 2004
59	T	Oman	N17°10'E54°18'	$\delta^{18}\text{O}$ (prec)	~10 000-0	U-Th	1.5-10 yrs	Fleitmann <i>et al.</i> , 2007
60	M	Arabian Sea	N24°23'E59°03'	MP: S (aridity)	~4 000-2 000	^{14}C AMS	100 yrs	Cullen <i>et al.</i> , 2000
R	L	Turkey, Iran	Comparison of 3 lakes, IDs 38, 40, 57	$\delta^{18}\text{O}$	~10 000-0	n.a.	n.a.	Jones and Roberts, 2008
R	-	-	Mediterranean	Review: P	Focus on YD	n.a.	n.a.	Bottema, 1995
R	-	-	Eastern Mediterranean	Review: P	~YD-6 000, ~9 000-6 000	n.a.	n.a.	Rosignol-Strick, 1995; 1999
R	-	-	Central Mediterranean	Review: P	~20 000-0	n.a.	n.a.	Combourieu-Nebout <i>et al.</i> , 1998
R	-	-	Mediterranean	P	~6 000-0	n.a.	n.a.	Roberts <i>et al.</i> , 2004
R	-	-	Levant	Review: MP	~25 000-5 000	n.a.	n.a.	Robinson <i>et al.</i> , 2006
R	-	-	Eastern Mediterranean	$\delta^{18}\text{O}$ (L/L, prec)	~25 000-0	n.a.	n.a.	Jones <i>et al.</i> , 2007
R	-	-	Mediterranean	Review: MP	Focus on 8 200	n.a.	n.a.	Berger and Guilaine, 2009
R	-	-	Mediterranean	Review: P	~11 500-0	n.a.	n.a.	Jalut <i>et al.</i> , 2008
R	-	-	Mediterranean	Review: $\delta^{18}\text{O}$	~20 000-0	n.a.	n.a.	Roberts <i>et al.</i> , 2008

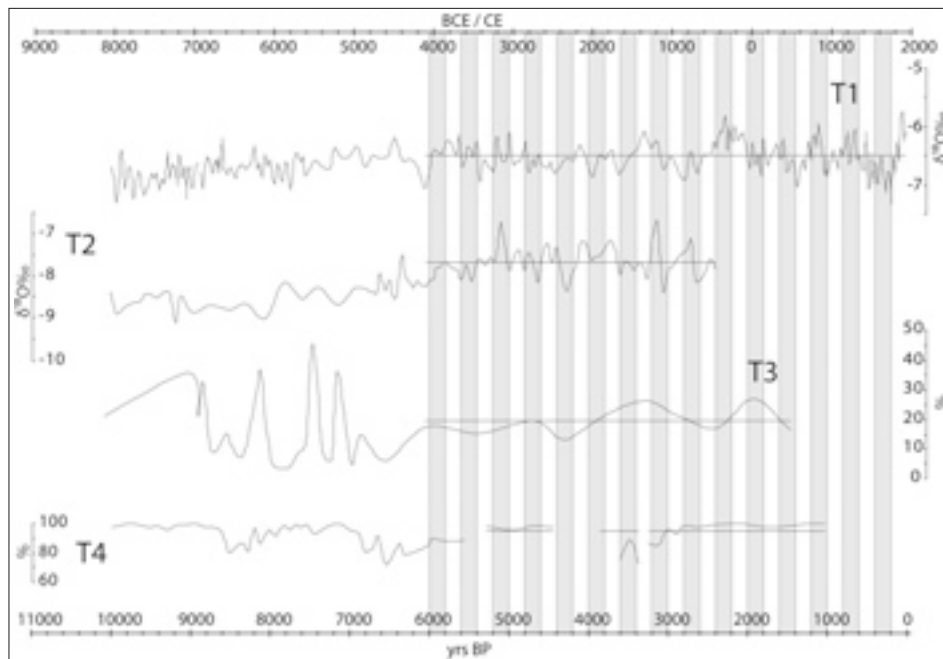


Fig. 3. Collection of proxy-based paleoclimatic data showing warmer (up) and cooler (down) conditions. Grey bars mark the 200-year periods used for the spatial analysis. Horizontal black bars in graphs show calculated average proxy value for the period 6000–0 yrs BP. T1. NE Italy, Frisia et al. 2005; T2. SW Romania, Constantin et al. 2007; T3. Adriatic Sea, Sangiorgi et al. 2003; T4. Aegean Sea, Rohling et al. 2002.

The proxy data, on which the paleoclimatic interpretation is based, derive from analyses of various kinds of natural archives containing information on past climate, such as palynological, diatom, isotopic and geochemical analyses of *lake and marine sediments*; *paleosoil* analysis; geomorphologic, stratigraphic, palynological and geochemical analyses of *alluvial and aeolian sediments*; and cave *speleothem* analysis.

The results are reviewed below with regard to three major time periods: i) early Holocene, c. 9500–4000 BC; ii) mid-Holocene, c. 4000–300 BC; and iii) late Holocene, c. 300 BC–AD 1850. The recent time, embracing the industrial revolution, is excluded here. While the early Holocene is covered rather briefly, the mid- and the late Holocene are treated in more detail.

Early Holocene, 9500–4000 BC

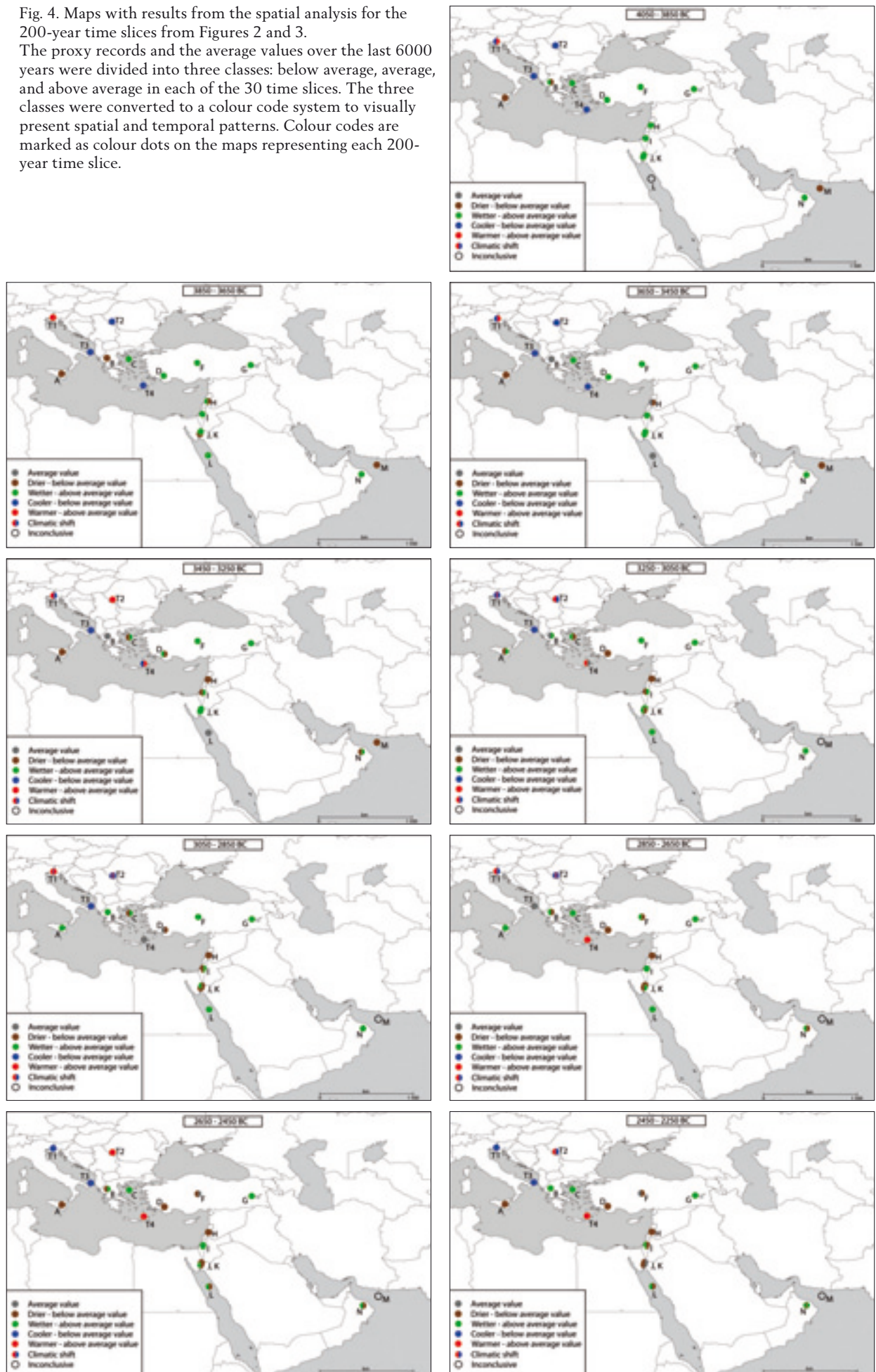
General long-term pattern

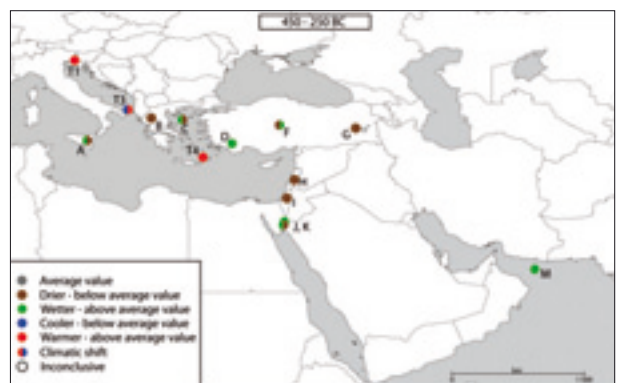
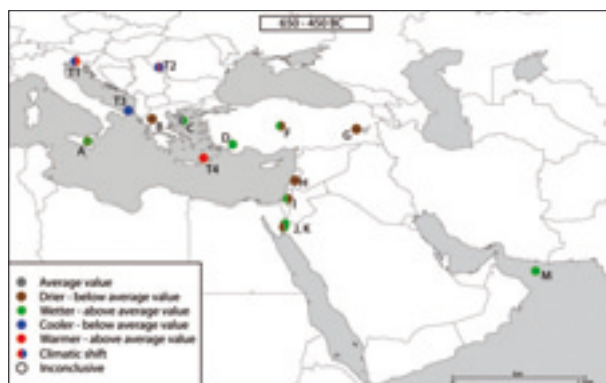
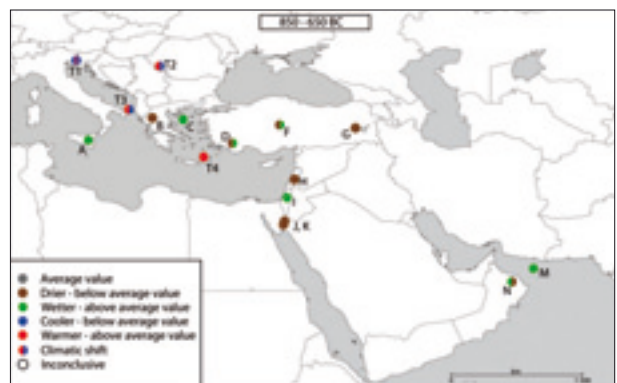
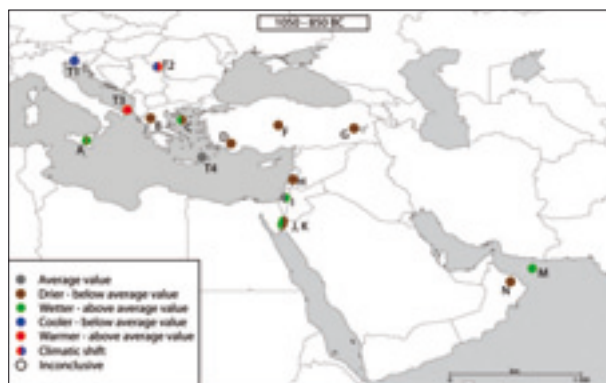
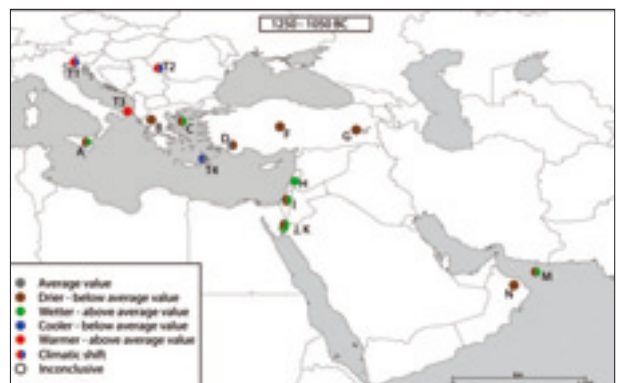
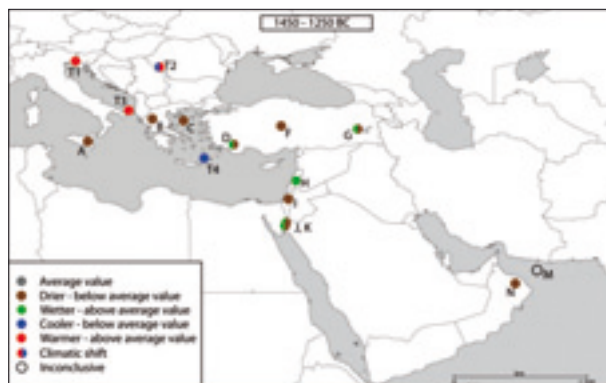
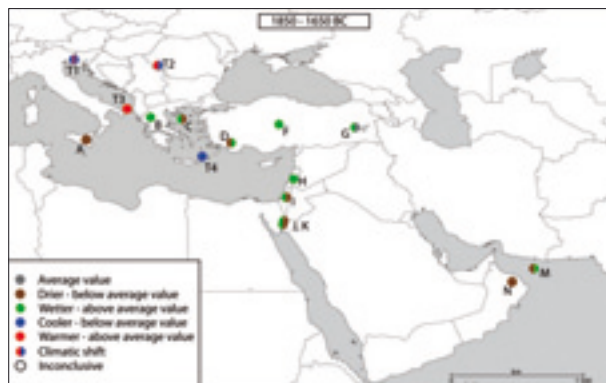
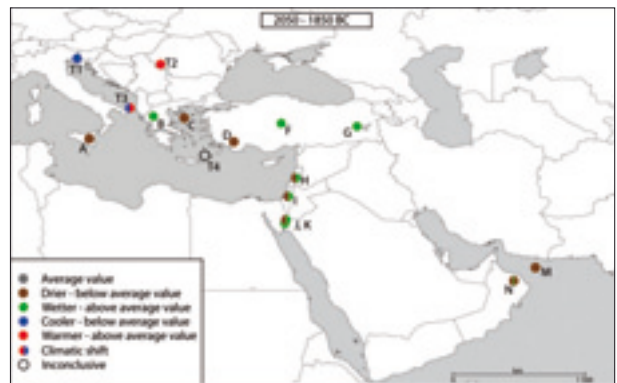
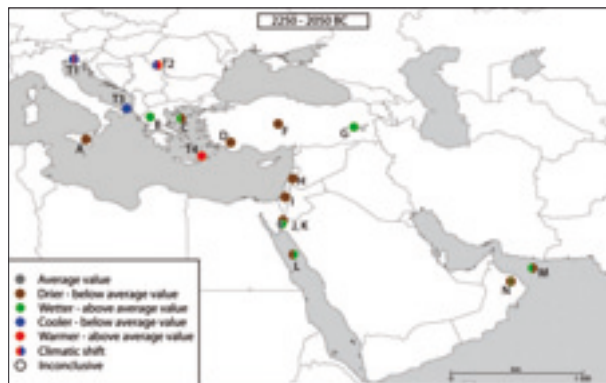
A wetter and warmer first half of the Holocene replaced the cool and dry conditions of the last Ice Age, the temperatures in the northern hemisphere generally rising after the Last Glacial Maximum around 21000 years ago. A final and sudden reversal to more glacial conditions occurred during the so-called Younger Dryas, 13000–11500 yrs BP,^{6, 7} The end of this cold period marks the start of the Holocene with rapidly improved climate conditions, when ice sheets melted and sea levels rose.

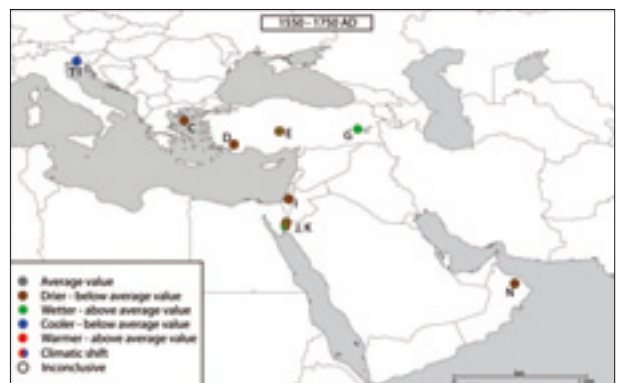
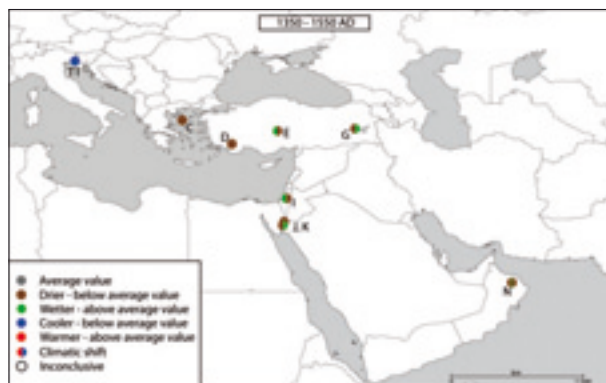
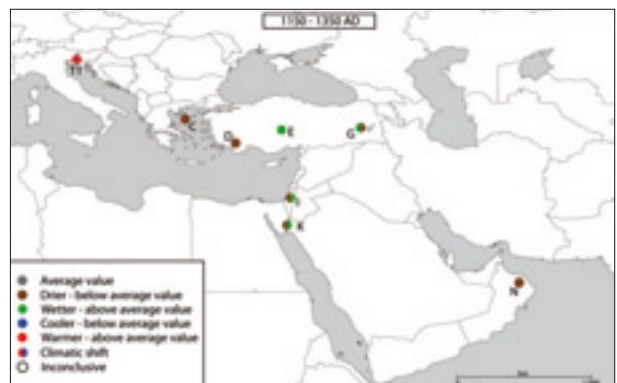
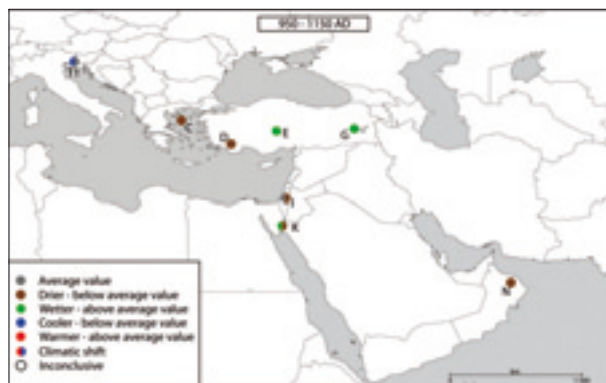
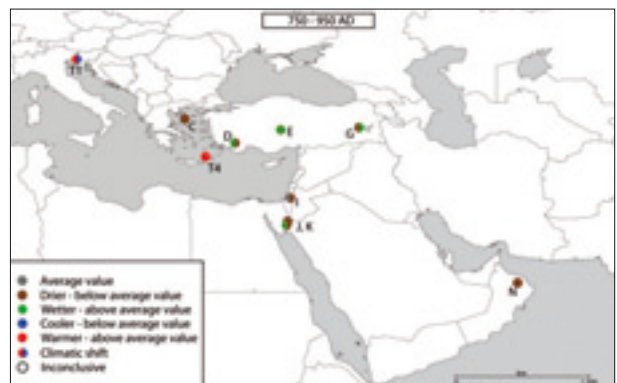
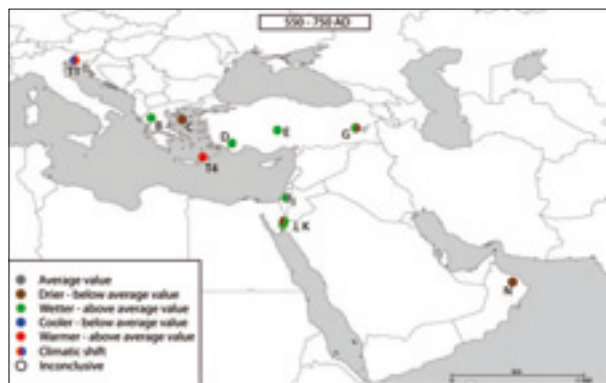
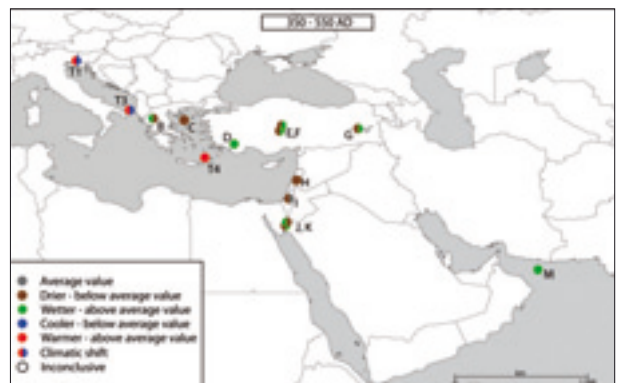
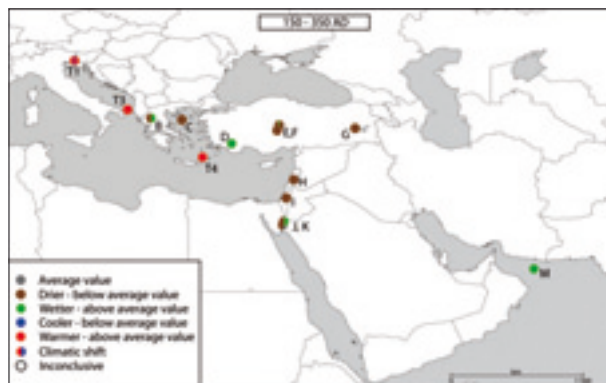
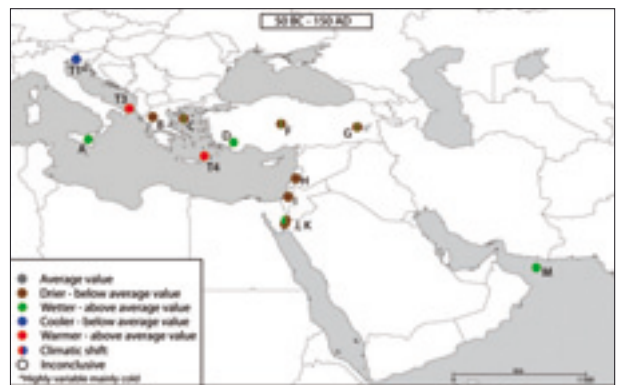
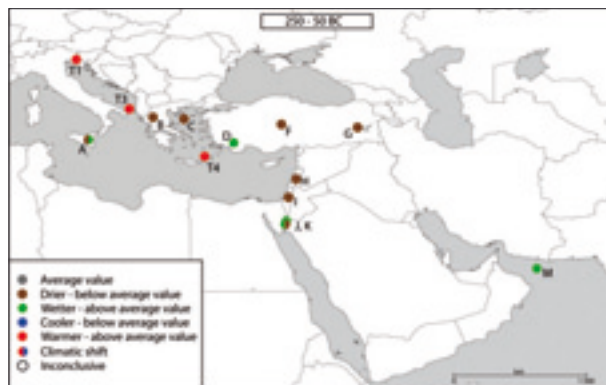
⁶ Yrs BP means years before present (by convention 1950).

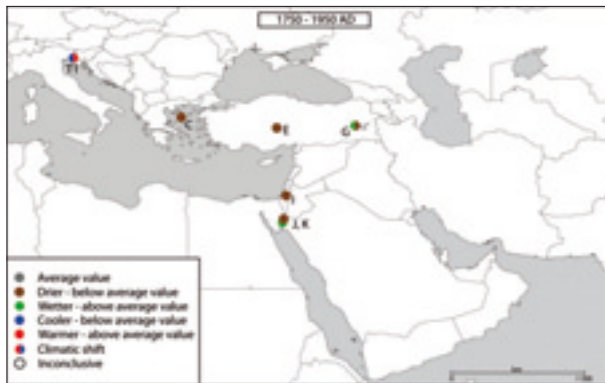
⁷ Steffensen et al. 2008.

Fig. 4. Maps with results from the spatial analysis for the 200-year time slices from Figures 2 and 3. The proxy records and the average values over the last 6000 years were divided into three classes: below average, average, and above average in each of the 30 time slices. The three classes were converted to a colour code system to visually present spatial and temporal patterns. Colour codes are marked as colour dots on the maps representing each 200-year time slice.









In the early Holocene the Sahara went from being a hyperarid desert to a grass savannah with scattered trees. The so-called Green Sahara was well established during the African Humid Period c. 7000–3500 BC; new lakes and temporary rivers developed thanks to rising water tables, and a wild savannah fauna expanded.⁸ The warmer, wetter conditions also led to marked vegetation changes in the Eastern Mediterranean and Middle East.⁹ Steppes with vegetation adapted to cool and dry conditions; for example, species of *Artemisia*, *Ephedra* and *Chenopodiaceae* were replaced by plants favoured by the warmer and moister climate. Trees and shrubs expanded in the region, and *Pistacia* soon became a common species favoured by the relatively mild winters and dry summers. Oaks became established early in the west and constituted a substantial part of the vegetation there from ~7800 BC, while the expansion phase further east came later. Fire regimes, dry summers and human impact have been suggested to explain the delay in the eastern Taurus-Zagros area. At around 4000–3000 BC oak-dominated forests and parklands had become established over much of the region with the exception of the Levantine corner in the south-east, where the oak dominance never was as strong as in other parts of the region. Here, drought-tolerant species of the *Chenopodiaceae* family still constituted a substantial part of the flora.

Increased precipitation during the early Holocene is described in multiple records from the Eastern Mediterranean,¹⁰ while the picture is more complicated in the north-east. Here, biological and sedimentological lake records (Lakes Zeribar and Mirabad, Iran) indicate a drier early Holocene, only reaching the wettest climate conditions around 4000 BC.¹¹ However, the isotope records from these lakes largely follow the general picture of the Eastern Mediterranean records that have been interpreted in the opposite way, namely as indicating wetter conditions.¹² In order to synchronize the isotopes with the records that indicate early Holocene dry conditions in Iran, they have been suggested to indicate high winter

8 deMenocal *et al.* 2000; Nicoll 2003; Brooks 2006; Kuper and Kröpelin 2006; Tjallingii *et al.* 2008.

9 Rossignol-Strick 1995, 1999; Combourieu-Nebout *et al.* 1998; Wick *et al.* 2003; Lawson *et al.* 2005; Frisia *et al.* 2005; Meadows 2005; Wasylukowa *et al.* 2006; Stevens *et al.* 2006; Mudie *et al.* 2007; Di Donato *et al.* 2008; Turner *et al.* 2008; Kotthoff *et al.* 2008a; Bordon *et al.* 2009.

10 Goodfriend *et al.* 1991; Arz *et al.* 2003; Bar-Matthews *et al.* 2003; Digerfeldt *et al.* 2007; Kotthoff *et al.* 2008b; Roberts *et al.* 2008; Marino *et al.* 2009.

11 Griffiths *et al.* 2001; Wasylukowa *et al.* 2006; Roberts *et al.* 2008.

12 Stevens *et al.* 2001, 2006; Jones and Roberts 2008; Roberts *et al.* 2008.

precipitation (snow) and concomitant dry springs and summers that impede vegetation development, especially oaks.¹³

The wetter conditions coincide with the summer precessional insolation maximum occurring in the northern hemisphere during the early Holocene. The stronger summer insolation enhanced the monsoonal system and shifted it northward over the African continent, leading to increased discharge from the Nile and creating the wetter, savannah-like conditions in the Sahara.¹⁴ The South Asian monsoon was enhanced over the Arabian Peninsula, however, about 1000 years later in comparison to the African monsoon.¹⁵ Although the monsoons shifted northward there is little evidence that monsoon precipitation reached the Eastern Mediterranean core region, and hence the increased rainfall in the northern Red Sea is proposed to be of Mediterranean origin.¹⁶ The stronger monsoon, however, impacted indirectly on the Eastern Mediterranean by the enhanced discharge from the Nile and North Africa, which led to a freshening of the surface waters in the Mediterranean basin and anoxic conditions in the water column, which, in turn, triggered the sapropel S1 formation, c. 7500–4500 BC. Paleoclimatic reconstructions based on stable oxygen isotope analyses of lake sediments show a more pronounced early Holocene wet phase in the eastern part of the Mediterranean region than in the western.¹⁷

The monsoonal activity weakens as the Holocene proceeds in correspondence with a weaker precessional forcing. Around 4000 BC records show a return to more arid conditions over the Arabian Peninsula and northern North Africa.¹⁸ The characteristics of the termination of the humid phase in northern Africa and over the Arabian Peninsula have been debated. Some scholars suggest an abrupt termination¹⁹ while others propose a more gradual process of aridification starting around 4000 BC.²⁰ From the records now available it seems most likely that the termination of the humid conditions was a gradual process in line with the gradually decreasing insolation. The aridification led to a reduction in Nile discharge and subsequently to increased salinity in the Mediterranean and a restart of the ocean circulation and bottom ventilation.

The “8.2 event”

Around 6250 BC there is evidence of a widespread climate anomaly often referred to as the 8.2 event (8200 yrs BP).²¹ The event is usually described as being a generally dry and cold period caused by melt-water influx from North American glacier lakes into the North Atlantic, which affected the thermohaline circulation and thereby temperature and salinity distribution, and induced cooler sea

13 Stevens *et al.* 2001, 2006.

14 Rossignol-Strick 1983, 1985; deMenocal *et al.* 2000; Gasse *et al.* 2002; Krom *et al.* 2002; Kuper and Kröpelin 2006; Kröpelin *et al.* 2008.

15 Parker *et al.* 2006; Fleitmann *et al.* 2007; Marino *et al.* 2009.

16 Arz *et al.* 2003.

17 Rohling 1994; Ariztegui *et al.* 2000; Emeis *et al.* 2000; Roberts *et al.* 2008; Marino *et al.* 2009.

18 Arz *et al.* 2003; Parker *et al.* 2004, 2006; Kuper and Kröpelin 2006; Fleitmann *et al.* 2007.

19 deMenocal *et al.* 2000; Morrill *et al.* 2003.

20 Overpeck *et al.* 1996; Kuper and Kröpelin 2006; Fleitmann *et al.* 2007; Kröpelin *et al.* 2008.

21 Alley *et al.* 1997; Mayewski *et al.* 2004.

surface and air temperatures. This situation seems to have affected vast areas in the northern hemisphere, including the Mediterranean.

In a number of marine records from the Eastern Mediterranean, sediment properties show a break in anoxic conditions and an interruption in the sapropel formation at this time, indicating a period of cooling (and aridity) that lasted some 150–200 years.²² While Rohling *et al.* (2002) propose that this and other cold spells are connected to periods of strong high pressures over Siberia, Marino *et al.* (2009) conclude that the event-like cooling at 8200 yrs BP, observed in the central Aegean, was connected to the shutdown of the North Atlantic thermohaline circulation as outlined above. In the Adriatic Sea there is also evidence for a period of aridity and an interruption in the sapropel²³ formation at around 8200 yrs BP,²⁴ but data is less clear regarding temperature trends. While some pollen diagrams indicate a cooling, the presence of *Pistacia* implies that winters could not have been significantly colder. Sangiorgi *et al.* (2003) discuss the possibility that the cooling was restricted to the east and that convective turn-over was responsible for the S1-interruption in the Adriatic. Greater aridity may also tentatively be inferred from the observation of higher sea surface salinity in the Levantine Basin, but this is not supported by the pollen data from the Ionian Sea, which show no indications of aridity. Evidence for a cooling from this region is even less clear.²⁵

Whether the hiatus in the sapropel formation and the 8.2 event are linked has been the subject of discussions.²⁶ From the review of paleoclimatic records for this study, it is clear that most records support the theory of a connection between the sapropel-interruption and the 8.2 climate anomaly.

With regard to the terrestrial records, cool and arid conditions are recorded in some, but not all, of the pollen studies from northern Greece and Albania; however, no similar pattern is visible from lake studies in Sicily.²⁷ Whether this is a result of the relatively low resolution and/or of human influence on the pollen records remains to be tested. Dry conditions have been observed further south, with a prominent drop in the level of the Dead Sea around 8200 yrs BP and a paleorainfall reconstruction from Israel that indicates lowered precipitation.²⁸

In contrast to the records mentioned above, data from Lake Van in Turkey indicate wetter conditions around 8200 yrs BP, which reduced steppe fires and triggered oak expansion. Other Turkish records (Lakes Acigöl and Gölhisar in central and south-western Turkey) do not show any evidence of a well-defined 8.2 event and neither does a stalagmite record from Lebanon.²⁹

22 Ariztegui *et al.* 2000; Myers and Rohling 2000; Geraga *et al.* 2000, 2005; Sbaifi *et al.* 2001, 2004; Rohling *et al.* 2002; Sangiorgi *et al.* 2003; Sperling *et al.* 2003; Wick *et al.* 2003; Gogou *et al.* 2007; Kuhnt *et al.* 2008; Kotthoff *et al.* 2008b; Marino *et al.*, 2009.

23 Sapropel is an unconsolidated nitrogen-rich material, formed of incompletely decomposed aquatic micro-organisms, found in anaerobic environments on the bottom of lakes and seas.

24 Combourieu-Nebout *et al.* 1998 ; Rossignol-Strick 1999; Sangiorgi *et al.* 2003.

25 Rossignol-Strick 1999; Emeis *et al.* 2000.

26 E.g. Robinson *et al.* 2006.

27 Sadori and Narcisi 2001; Zanchetta *et al.* 2007; Wilson *et al.* 2008; Bordon *et al.* 2009.

28 Bar-Matthews *et al.* 2003; Migowski *et al.* 2006.

29 Roberts *et al.* 2001; Wick *et al.* 2003; Eastwood *et al.* 2007; Verheyden *et al.* 2008.

Mid-Holocene, 4000–300 BC

– The era of the early civilizations

General long-term pattern

There is a clear regional trend from a wetter early Holocene (*Figs. 2, 4, 5*) to drier conditions during the Era of Early Civilizations 4000–300 BC. The final desiccation of the Eastern Sahara occurred in c. 3300 BC and the Nile flood discharge diminished. The Saharan climate from then on is characterised by extreme arid conditions, occasionally interrupted by short moist periods.³⁰ The majority of records from the western part of the Eastern Mediterranean indicate that drier conditions were already fully established at the beginning of this era, while most records closer to Mesopotamia rather show a gradual decline in humidity throughout the era.³¹ Only two studies, from Israel and Turkey, provide quantitative estimates of humidity changes, with the early Holocene rainfall amounts being approximately 20% higher or more in comparison to the last millennia, and a decrease in rainfall from about 500 mm (i.e. equal to present-day levels) in c. 2500 BC to 300 mm in 500 BC.³²

On the contrary, a pollen-inferred quantitative climate reconstruction from the southern Balkan region shows no clear long-term trends during the Holocene but rather stable climate conditions. Further, a lake level record from northern Italy shows an opposite pattern with drier conditions in the early Holocene, which is proposed to reflect that this north-west situated record responds to the long-term changes in summer insolation in a similar way as the NW region of Europe, rather than as the SE Mediterranean region.³³ In terms of *temperature changes* (*Fig. 3*), stalagmite records from Italy and Romania show a moderate warming trend from the early to the late Holocene, while marine records from the Adriatic Sea and the pollen-based quantitative estimates from the southern Balkans show very little long-term trends.³⁴ More detailed high-resolution studies are needed in order to understand whether these discrepancies are due to interpretation problems or if they reflect local differences in the climate evolution. The bulk of empirical evidence so far, together with the expected pattern caused by the northern hemisphere insolation forcing (precession cycle), suggests that the general interpretation of a change from the wetter early Holocene towards generally drier conditions in 4–3000 BC is valid.

The forests, in particular the oak forests and parklands that had expanded during the warm and moist early Holocene, now declined. The human agent together with decreasing moisture induced this reduction of woodlands and led to the development of the modern Mediterranean flora with xerophytic shrublands and steppe elements.³⁵ It is, however, impossible to determine the relative role of climate change and human activities behind this deforestation.

30 Lindstädtter and Kröpelin 2004; Brooks 2006; Zalat and Vildary 2006.

31 Roberts *et al.* 2001; Frogley *et al.* 2001; Lawson *et al.* 2004; Eastwood *et al.* 2007; Zanchetta *et al.* 2007; Kuhnt *et al.* 2007.

32 Bar-Matthews *et al.* 2003; Jones *et al.* 2007.

33 Magny *et al.* 2007; Bordon *et al.* 2009.

34 Rohling *et al.* 2002; Sangiorgi *et al.* 2003; Frisia *et al.* 2005; Constantin *et al.* 2007; Bordon *et al.* 2009.

35 Jahns *et al.* 1993; Roberts *et al.* 2001, 2004; Lawson *et al.* 2004, 2005; Stevens *et al.* 2006; Eastwood *et al.* 2007; Sadori *et al.* 2008; Di Rita and Magri 2009; Jalut *et al.* 2009.

Climate variability within the era

Within the overall pattern of drier climate in the region, the records available show a great deal of spatial variability (Figs. 2–4). Some of this variability may be governed by local climate factors and/or by factors other than climate, disturbing the climate signal. However, some of the variability shows a larger spatial scale pattern that may reflect regional climate variability.

Considering the humidity pattern (Fig. 2) wetter conditions than average for the period are observed from c. 3300 to 2800–2000 BC in records from southern Italy, western Turkey, the Aegean Sea, Israel and the United Arab Emirates.³⁶ These wetter conditions are followed by a century-to-millennium-long period of drier conditions observed at many sites around 2000 BC. In contrast to this are lake level records from central Italy suggesting generally low lake levels and drier conditions prior to 2450 BC and a wetter situation thereafter. Also one of the two lake records from western Anatolia indicates that the era starts with fairly dry conditions, and the record from the southern Balkans points to drier conditions centred around 3000 BC.³⁷ A fair number of records from the Middle East – i.e. from Lebanon, the Dead Sea, and the United Arab Emirates – also show wet conditions between (or within) c. 2000 and 1000 BC,³⁸ that is, when the more northern situated regions experienced generally drier conditions. After c. 1000 BC most records indicate a mostly drier than average climate. In Israel very low rainfall, 250 mm per year, is estimated for the period 600–400 BC, possibly corresponding to the drought that has been observed in a record from Lebanon c. 700 BC.³⁹

Regarding temperature changes (Fig. 3), the two cave records from NE Italy and SW Romania indicate colder conditions in 2850–2150 BC and in 3250–2450 BC, respectively. In the east Aegean Sea colder temperatures are registered for the period 3550–3050 BC. In addition, three cold intervals are inferred from the Italian cave record, namely in i) 1600 BC; ii) 1050 BC; and iii) 800 BC. All three intervals correspond fairly well in time with cool events observed in the Adriatic. The alkenone-based⁴⁰ temperature record from the Adriatic Sea reveals the coolest estimated spring temperature of 13.8°C to have occurred in c. 1050 BC. This can be compared to the current spring temperature of about 16°C.⁴¹

Warmer intervals are documented in the Italian cave record in 3150, 2150, 1350 and 450 BC, corresponding fairly well to the alkenone temperature record from the Adriatic Sea. Two of the warmer spells in 3200 and 1300 BC are also observed in the Romanian speleothem record.⁴²

36 Roberts *et al.* 2001; Bar-Matthews *et al.* 2003; Parker *et al.* 2004, 2006; Zanchetta *et al.* 2007; Kuhnt *et al.* 2008.

37 Eastwood *et al.* 2007; Magny *et al.* 2007; Bordon *et al.* 2009.

38 Neumann *et al.* 2007b; Kaniewski *et al.* 2008; Verheyden *et al.* 2008.

39 Parker *et al.* 2004, 2006; Kaniewski *et al.* 2008.

40 The distribution and character of the ketone alkenone, which is produced by some phytoplankton and found in marine and lake sediments, can be used for measuring past sea temperatures.

41 Sangiorgi *et al.* 2003; Frisia *et al.* 2005; Constantin *et al.* 2007; Piva *et al.* 2008; Bordon *et al.* 2009.

42 Sangiorgi *et al.* 2003; Frisia *et al.* 2005; Constantin *et al.* 2007.

The time around 2200 BC – the so-called 4.2 event

Much attention has been given to the impact of climate change at the end of the Old Akkadian period in northern Mesopotamia around 2200 BC, and scientists have proposed that a volcanic eruption and/or a severe drought of great amplitude that lasted about 300 years affected the Eastern Mediterranean in 2250–2200 BC.⁴³ However, the global influence of the volcanic eruption that took place in Iceland (Hekla 4) at 4260 yrs BP has not been confirmed,⁴⁴ and a screening of the bulk of empirical data available does not lead us to either confirm or deny the proposition of a rapid and dramatic event. While the majority of records show that the period around 2200 BC was one of drier than average climate (Figs. 2, 4), only two records show a prominent, short-lived, high-amplitude event, namely the records from the Gulf of Oman and the Red Sea, respectively.⁴⁵ Many of the other records, cited above, from the Red Sea as well as from south, west and north of Mesopotamia do show aridification,⁴⁶ but nothing as well constrained in time, or as unique in amplitude, as would be expected for a significant drought. Two speleothem records, one with very high resolution from Oman and the other of less resolution⁴⁷ from Jordan, show no evidence of a dry event at all. Two shorter isotopic records are provided from a tree study in Israel and a study on plant remains in Syria.⁴⁸ These records spanning only 300 and 1200 years, respectively, show a dry spell centred around 2200–2100 BC, but the amplitude of this can not be traced because of the short duration of the records.

Moving towards the northwest, with the exception of a speleothem record⁴⁹ there is little clear evidence for a pronounced, event-like, climate anomaly in c. 2200 BC, even though many records point to drier conditions over, or near, this period of time,⁵⁰ and the Romanian speleothem record suggests cooler conditions.⁵¹ In contradiction to this are some lake level studies from northern Italy that suggest a lake high stand in 2200 BC, while other lake studies from the same region point to dry conditions.⁵² It is unlikely that these lakes situated in northern Italy experienced different climate conditions, hence the differences in the records that point out problems in the age models and/or in the interpretation of the proxy data.

From marine records, taken in the Adriatic Sea, a cool period, based on the foraminifera species composition, has been inferred close to 2200 BC, while other marine data (alkenone-based temperature estimates) show no colder conditions at all. Records from the north Aegean, based on changes in the foraminifera spe-

43 E.g. Cullen *et al.* 2000; Staubwasser and Weiss 2006.

44 Hall *et al.* 1994; Zielinski 2000.

45 Cullen *et al.* 2000; Arz *et al.* 2006.

46 Roberts *et al.* 2001; Bar-Matthews *et al.* 2003; Wick *et al.* 2003; Parker *et al.* 2004, 2006; Pustovoytov *et al.* 2007; Eastwood *et al.* 2007; Edelman-Furstenberg *et al.* 2009.

47 Fleitmann *et al.* 2007; Verheyden *et al.* 2008.

48 Fiorentino *et al.* 2008; Frumkin *et al.* 2009.

49 Drysdale *et al.* 2006.

50 Magri *et al.* 1999; Baroni *et al.* 2006; Zanchetta *et al.* 2007; Kuhnt *et al.* 2008; Di Rita and Magri 2009.

51 Constantin *et al.* 2007.

52 Baroni *et al.* 2006; Magny *et al.* 2007, 2009; Di Rita and Magri 2009.

cies and increased physical weathering of the mineral illite in c 2200 BC, also indicate cooler and drier conditions.⁵³

Late Holocene, 300 BC to AD 1850 – From the era of classical civilizations to the medieval and early modern

Warm Roman period with variable humidity conditions

In 400–300 BC, the dry conditions that prevailed since c.1000 BC gave way to a more humid climate, especially in the Middle East (Figs. 2, 4), and the levels of pollen indicating humid conditions and/or anthropogenic activity increased rapidly throughout the region and peaked during the Roman period.⁵⁴ However, as mentioned previously, it is almost impossible to distinguish between changes and trends in the pollen record that may be a clear climate signal and those that may be due to cultivation.

In the Middle East the levels of the Dead Sea indicate humid conditions with rising levels from c. 400 BC and a peak reached around 100 BC. Paleorainfall reconstruction based on stable oxygen isotope data from Soreq Cave, Israel, indicates rising amounts of precipitation during the same interval. The estimated rainfall amount reaches almost 400 mm per annum before a drier period (approx. 300 mm rain per year) is initiated just after BC/AD.⁵⁵

Most records registering temperature changes point to warmer conditions during Roman times (Figs. 3, 4) The cave speleothem record from Trieste, Italy, shows warm conditions (similar to present-day temperatures) between 600 BC and AD 0 with the warmest peak at around 400 BC. This is supported by data from the Adriatic Sea, suggesting warm conditions between 600–50 BC according to an alkenone-derived temperature record, and warm and dry conditions between c. 150 BC and AD 250 according to other proxy records.⁵⁶

Early first century AD dry conditions

While Turkish lake records from Lake Van and Eski Acigöl⁵⁷ generally suggest that the mid-Holocene drier conditions changed to conditions similar to today in 50 BC, many other records propose that the beginning of the Common Era was a period of warmer and drier conditions (Figs. 2–4). Data from Berket Basin in Turkey show a moisture increase in 250–40 BC, and a return to more arid conditions, together with a rise in temperature from 40 BC to c. AD 450. Inferred warmer conditions probably meant that no prolonged frost periods occurred and that winter temperatures did not go below -13°C. Within this period of generally

53 Giunta *et al.* 2003; Sangiorgi *et al.* 2003; Ehrmann *et al.* 2007; Kuhnt *et al.* 2007, 2008; Kotthoff *et al.* 2008; Piva *et al.* 2008.

54 Jahns 1993; Athanasiadis *et al.* 2000; Vermoere *et al.* 2000; Jahns 2005; Eastwood *et al.* 2007; Kaniewski *et al.* 2007; Neumann *et al.* 2007a, b; Cordova 2008; England *et al.* 2008; Kotthoff *et al.* 2008; Di Rita and Magri *et al.* 2009.

55 Bar-Matthews *et al.* 2003; Bookman *et al.* 2004.

56 Sangiorgi *et al.* 2003; Frisia *et al.* 2005; Piva *et al.* 2008.

57 Roberts *et al.* 2001; Wick *et al.* 2003.

more arid conditions there were several, shorter, dry peaks (minimum duration 15 years) and the driest period occurred between AD 130 and 350. Dry conditions within this period of time, around AD 250, are also inferred from the few and scattered records available from Greece, and a lake record from central Anatolia indicates intense summer droughts and low winter precipitation between AD 276 and c. 530.⁵⁸

Some spatial trends in humidity might be discernible (*Fig. 4*). Even though human activities most likely were high throughout the region, the growth of olive trees in Italy remained low until c. AD 450, while records from Greece suggest high levels of olive during the same time period. This could well be a signal that there was a gradient in humidity from western sites (Italy) that might have been too wet for olive and eastern sites (Greece, Turkey, Middle East) with drier conditions, favouring olive growth.⁵⁹

Around BC/AD lake levels in the Dead Sea dropped, reaching a low in AD 300. A new high stand is then recorded from AD 340–470. A comparison of marine, forams, and terrestrial stable isotope data from the Mediterranean Sea and Soreq Cave, Israel, suggests increasingly more humid conditions between c. 50 BC and c. AD 650, while a more recent very high resolution record from Soreq Cave indicates a drop in annual precipitation in AD 100–700, which may have been as large as 300–400 mm.⁶⁰

Moister and great regional variability from c. AD 450–1000

Around AD 450 many records indicate a shift from drier conditions to a more humid situation. However, this picture of a more benign climate situation is not uniform since there are records in the basin that show dry conditions (*Figs. 2, 4*).⁶¹

In the Trieste area, according to the cave speleothem record, the warm period was followed by relatively stable conditions until c. AD 450 when cooling was initiated.⁶² The cool phase ended c. AD 700 with the onset of warmer temperatures that lasted until c. AD 850 followed by a new period of cool conditions until AD 1000. Data from the Adriatic Sea suggest cooler and wetter conditions between AD 250 and 450, followed by warmer and drier conditions starting around AD 550, and cooler and wetter conditions prevailing for some 200 years around AD 750.⁶³ Other proxies from this record only show minor fluctuations during this time period, suggesting that the temperature change mainly concerns lower spring and summer temperatures and less seasonal contrasts (*Fig. 3, 4*).

Two records from Turkey also suggest that moister conditions were initiated around AD 450. The records derive from the lake study of Berket Basin, Turkey,⁶⁴ and show moister conditions around AD 450 with a higher water table that lasted at least until c. AD 650 (when the high resolution detailed part of the record ends). The highly resolved lake oxygen isotope record from Nar Gölü⁶⁵ displays a rapid depletion in AD 486–561, indicating a shift into a period of less intense

58 Jones *et al.* 2006; Kaniewski *et al.* 2007; Ehrmann *et al.* 2007; Kuhnt *et al.* 2008.

59 Jahns 1993; Athanasiadis *et al.* 2000; Di Rita and Magri 2009.

60 Schilman *et al.* 2002; Bookman *et al.* 2004; Orland *et al.* 2009.

61 Fleitmann *et al.* 2007; Kuhnt *et al.* 2008; Verheyden *et al.* 2008.

62 Frisia *et al.* 2005.

63 Piva *et al.* 2008.

64 Kaniewski *et al.* 2007.

65 Jones *et al.* 2006.

summer drought. This period of more winter rain and lower summer evaporation extends over the period AD 530–1400, interrupted by an excursion in AD 800 that indicates a short dry spell.

In contrast, the stable oxygen isotope record from Lake Mirabad in Iran has been interpreted to indicate a drier period c. AD 450, and the levels of the Dead Sea indicate a lake level drop during the late 5th century AD followed by an erosional hiatus until the 11th century AD, and an inferred regional dry period in AD 450–1550. Data from Soreq Cave in Israel and marine sediments outside the coast of Israel indicate a later end to the more humid phase and that drier conditions were initiated in AD 650 and lasted until 1050.⁶⁶

Except for at one eastern-situated site, Ze'elim, which was probably more susceptible to aridity and where a decrease in anthropogenic indicators occurs between AD 240 and 430, the period of high agricultural activity seems to have ended first around AD 600–800 when several records show a rapid decline in pollen from cultivated plant species and a rise in natural vegetation including trees.⁶⁷

The Medieval Times and “The Little Ice Age”

Judging by the limited number of temperature records available, the medieval times seem to have been warmer and the so-called Little Ice Age (LIA) colder (Figs. 2–4). The record of humidity pattern is less clear. The Trieste stalagmite stable isotope record reflects warmer temperatures, similar to today, in the interval AD 1150–1400 during medieval times, supported by the marine record from the Adriatic Sea indicating warm and dry conditions that lasted 200–300 years around AD 950. These warm temperatures were followed by the coldest period indicated in the Trieste cave record, between AD 1450 and 1800, similar to the widespread cold temperatures of the LIA and in the Adriatic Sea from c. AD 1550 until the end of the record.⁶⁸ The lake records from Nar Gölü in central Anatolia and Lake Mirabad in Iran indicate a shift towards drier conditions in the beginning of the LIA in c. AD 1400–1450.⁶⁹ The Dead Sea faced rising lake levels and sustained lacustrine conditions during medieval times, between AD 1020 and 1390, followed by low lake levels AD 1381–1690 according to Bookman *et al.* (2004), but persistently drier between AD 450 and 1550 according to Migowski *et al.* (2006). The Israelian cave and marine records⁷⁰ point to medieval humid conditions in AD 1050–1350, and a dry period coinciding with the LIA in AD 1350–1650.

Discussion

Although climate proxy data is increasingly available from terrestrial, lacustrine and marine environments in the Eastern Mediterranean and the Middle East, there are still big gaps in the spatial coverage, many problems with poor chrono-

66 Schilman *et al.* 2002; Bookman *et al.* 2004; Migowski *et al.* 2006; Stevens *et al.* 2006.

67 Vermoere *et al.* 2000, 2002b; Eastwood *et al.* 2007; Knipping *et al.* 2008; Jahns 1993; Athanasiadis *et al.* 2000; Kaniewski *et al.* 2007; Neumann *et al.* 2007a, b; Cordova 2008.

68 Frisia *et al.* 2005; Piva *et al.* 2008

69 Jones *et al.* 2006; Stevens *et al.* 2006.

70 Schilman *et al.* 2002.

logical controls, and limited consensus regarding how to interpret available data in terms of climate parameters and potential drivers. The ambiguity concerns, for example, issues of synchrony and asynchrony between the sub-regions, between east and west, and between land and sea. These ambiguities must be addressed in order to acquire precise understanding of the spatial and temporal patterns of short-term (millennial-centennial-decadal) climate variability, as well as of the relative importance of different climate driving processes and internal feedback effects at a regional scale.

One region-specific “problem” is the long presence of humans, implying that pollen records are heavily affected by human activity, which limits the potential to use pollen and inferred vegetation for climate interpretations. In order to extract the climate signal from the anthropogenic signal there is thus a need for data other than pollen records, for example stable isotope records from various archives, such as lake sediments and cave speleothems. Such records are now increasingly available from the region, but even here the climate signal is far from straightforward. The stable isotopic composition in various archives is governed by several processes that act at different spatial and temporal scales, and it is often hard to constrain which of the processes are dominating. Existing interpretations of stable isotope records therefore differ among different studies.

Also, when reconstructing past climate changes it is assumed that the environmental processes that govern the pattern of, for instance, vegetation or the oxygen isotope composition of precipitation have been the same for the entire period of the reconstruction (e.g. the Holocene). This is most likely not true.

Further difficulties arise from the great uncertainties that are often present in the age models based on radiocarbon dating and that preclude us from tying climatic events to a specific year or years – something that is needed when discussing climate-society interrelations.

Even though many studies from the overall region exist, some sub-regions are underrepresented. The dry region of Mesopotamia, with its rich archaeological record, has a general lack of locally derived data on the synchronous climate evolution. This is due in large part to the region’s predominantly arid climate, which limits the preservation of organic material and which has resulted in a lack of paleoenvironmental proxies. Hence, the climate pattern over the region has to be inferred from paleoclimatic data series available from the nearby surroundings west, north and south of the core of ancient Mesopotamia. Also, Greece is underrepresented among the existing high-resolution, continuous, paleoclimatic records. There are records covering the Holocene, but most of them are poorly dated and consist mainly of palynological records, and differentiating between the potential agents behind the changes in vegetation, climate and land use is not a straightforward process.

Some conclusions on the climate evolution can of course be drawn, while still respecting the existing uncertainties. Generally, changes in humidity are much more clearly revealed than temperature changes, perhaps because the temperature variability has been of minor amplitudes. The picture of a smooth transition from a wetter early Holocene to a drier late Holocene is fairly clear and is well explained by the insolation changes in the northern hemisphere. The pattern over and within the last c. 6000 years is less clear. In order to trace any general temporal patterns of climate variability over these 6000 years, the observations from the reviewed paleo-proxy data, divided in the 200-year time slices (*Fig. 4*), were compiled (*Fig. 5*). From this compilation we may conclude that the period

- 4000–3400 BC was mainly wetter than average
- 3400–2600 BC was still wetter than average but less wet in comparison to the previous period
- 2600 BC – AD 600 was a period when drier conditions became fully developed
- AD 600 – recent time is a period with far fewer available paleoclimatic records, hampering any firm conclusions
- The mid-Holocene was cooler than the late Holocene
- 400 BC to AD 400, encompassing the Roman period, had warmer than average temperatures over the last 6000 years

Scholars interested in understanding the role of climate change for societal development need highly resolved local data in order to assess the impact of external forcing, such as climate, on human societies. Such data together with previous syntheses have shown that there is a fairly clear climate gradient between the Eastern Mediterranean and the Middle East, where sub-regions sometimes experience opposite humidity conditions (Fig. 4). This is typical for a region situated at the border of two major climate systems, and it calls for caution when comparing spatially dispersed climatic and societal data sets.

Short-lived but rapid climatic events are also of considerable relevance to archaeologists. Even though it is tempting – in our opinion, and based on available climate data – it is still too early to draw far-reaching conclusions about a possible rapid climatic event contributing to the fall of the Old Akkadian state. More precisely dated and precisely interpreted high-resolution paleoclimatic data are needed to further test the extent and character of this so-called 4.2 (2200 BC) event. Nor can any other events during the last 6000 years be reliably traced, because locally derived climate data are not well enough resolved. Hence, the relative role of climate for societal development in a historical perspective, including the role of long-term trends versus short-lived drastic changes, must remain a matter for debate and further research.

Even though great steps have been made in the study of paleoclimatology, the possibilities to reliably constrain short-lived climatic events and small-scale climate variability exactly in space and time are still limited, and records that provide information on absolute changes in temperature and precipitation are still sparse. Any comparison made between climate variability and societal development must take these uncertainties into account.

To improve the knowledge of patterns and drivers behind climate variability in the Eastern Mediterranean and the Middle East and their influence on societal development there is a need to

- conduct more detailed high-resolution studies in order to understand whether the observed discrepancies between existing records are due to interpretation problems or to local differences in the climate evolution;
- improve the geographical coverage through the investigation of new potential paleoarchives in the interior of Mesopotamia and in Greece. Caves, available in both these regions, may constitute such a new source;
- evaluate the significance of the interpretation of the available climate proxy data, and that which has been generated from this project, by using proper statistical techniques;
- test the accuracy in the interpretation of available stable isotope records by means of improved high-resolution analysis and isotope modelling experiments;

- contrast local to regional proxy data with results from climate models, thereby testing hypotheses on the reasons behind past regional climatic changes.

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2. Cultural Interaction and Cognitive Expressions in the Formation of Ancient Near Eastern Societies

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ABSTRACT

The significance of interaction and networking in the development and change of societies is emphasized in this brief long-term study of a wide geographical area of the ancient Near East.

The discussion of some, in particular cognitive, aspects of the emergence of early societies begins with the first signs of sedentism which appear among the Natufians of the southern Levant c. 12500 BP. The chapter continues with some glimpses into early farming at Jericho and later the Pottery Neolithic of the village culture of Çatalhöyük in central Anatolia. Eventually the focus shifts to the urbanisation process of Lower Mesopotamia in the fourth millennium BC, where agricultural innovations and economic networks, based on regional interaction and long-distance colonization of Upper Mesopotamia, were made possible through the strict religious and administrative organization.

The study shows that social and economic interaction was deeply rooted in cognitive expressions and should be connected to the dispersal of material culture and ideas over extended geographical areas. Accordingly this promoted different forms of development and change in early societies.

Introduction

Artefacts do not have minds of their own. But neither do people. Both are caught up from the first in networks of action that are the basis for our ability to people the world, live in settled communities and diversify our material worlds beyond anything known to other species.¹

Recent research on cognitive archaeology underlines the importance of sociality, interaction and networking in the development and change of both the human mind and human societies. Essential in this connection is the understanding that

¹ Coward & Gamble 2009, 63.

human networks incorporate relations with material culture, plants, animals and the landscape.²

The intention of this study is to highlight the importance of networking – the interaction and cultural exchange between peoples – in the emergence of village and urban societies in the ancient Near East. Focus is also put on the cognitive expressions and changes in these processes as reflected in the material culture and the environment, including the landscape, flora and fauna.

The study is ordered chronologically from the first sedentary settlements and village cultures in the southern Levant and central Anatolia, to the initiating urbanisation processes in southern Mesopotamia and the interconnection of this area with eastern Anatolia and northern Syria. Given the vast geographical and chronological scope of this subject only glimpses can be provided here, but hopefully they will inspire further research in the field.

The dynamic dimension of the relationship between peoples, material culture and environment

The gradual incorporation of material culture into social networks has been argued to be a key process in the development from face-to-face social interaction to complex human societies.³ The predicted increase in the size of hominid groups as a measure of growing social complexity, including for instance hunting in large groups – activities requiring communal strategies, division of labour, and sharing of meat – correlates with increased brain size according to Dunbar's social brain model. This phenomenon is seen especially in the disproportionate expansion of the neocortex, which is the part of the brain where the most significant features of human cognition are found. Social bonding is cognitively demanding, and accordingly it is suggested that the evolution of the neocortex is driven by the complex interaction between group members. The physical manifestation of these processes is visible in the sequence of fossil crania over the last three million years.⁴

The ability to produce and use material resources promoted cooperation between individuals and groups of people. This ability gave several advantages to the human species at an early stage and is considered to be the key mechanism behind the spread of humans throughout the world.⁵ Consequently material remains gave the humans a culture and a history – or rather cultures and histories.⁶ The gradual and continued adoption of material culture by human communities promoted the extension of social interaction networks beyond the limitation of face-to-face interplay, since artefacts and ideas can travel long geographical distances and leave their traces throughout the record of the human past. Social

2 Coward & Gamble 2009; Dunbar 2007, 91; Renfrew 2007, 103.

3 Coward & Gamble 2009; Dunbar 2007, 97.

4 Dunbar 2003, see also Dunbar 2007, 91–92, fig. 8.1 for a contemporary comparison with other hominids.

5 Coward & Gamble 2009, 58.

6 However, recent work on chimpanzee and other animal communities that focuses on tools and settlement construction has challenged previous ideas about the uniqueness of human involvement in material culture.



Plate 1. Bronze Age cairns as markers in the landscape, Palmyra, Syria. Photo by the author.

relationships are represented by the shared material cultures, or imitations, in nodes of such networks.

Traces of materiality are also incorporated as imprints in the landscape, recognized for example in monuments and cairns that can be found in systems all over the globe, not least in West Asia. The structured location of several hundred Bronze Age cairns, distributed on strategic hill tops and wadi outlets in the mountain range outside the ancient trading centre of Palmyra in Syria, indicates that in addition to being used as burial chambers these cairns might have served as landmarks along routes in an extensive ancient trading network (*Plate 1*).

The dynamic dimension of the relation between people and material culture can be found in A. Giddens' structuration theory, which puts forward the idea that *we actively* create material, social and cognitive structures (e.g. networks) through our actions, and these structures in turn react upon us and bring about new actions. The interplay between action and structure, and between mind and material, is the basis of the use of structuration theory among archaeologists. People produce material culture with certain aims, which in turn can have repercussions on their thoughts and actions. In this way changes are an integral part of society; neither society nor structure will remain static because of the continuous mutual impact of structure and action.⁷ Episodic changes (fundamental changes in the social system), to which both sedentism and urbanism should be counted, are according to Giddens caused by the conflicts and frictions that can arise when

⁷ Giddens 1984. For an overview of the structuration theory see Olsen 1997, 164–171, 207–216.

societies with totally different structures meet, for example when hunter-gatherers or pastoralists meet a sedentary community (see examples below). These meetings often lead to a relation of dependency, for instance in the exchange of information and goods.⁸ The contact with a dissimilar society opens up for new and alternative ways of thinking, which might dissolve the ideological cohesion (e.g. religion or politics as a means of control) that holds a society with inherent oppositions together and prevents change and development.⁹

The interaction between peoples, material culture and environment is more clearly understood if we consider the process of sedentism and urbanism from this perspective. The structuration theory claims that man intervenes actively and intentionally in his environment and social system.¹⁰ Favourable environmental conditions in the beginning of the Holocene triggered the active involvement of humans in landscape exploration, which gradually led to experimentation in farming and animal domestication.¹¹ The increasing production of material culture and the technological innovations were further repercussions. This process did not occur without confrontation and interaction with societies that were structured in different ways, such as hunting-fishing communities and sedentary societies, and this promoted new ways of thinking with regard to culture, ideology, and economy. Likewise the human ability to intentionally create and manage social and economic networks, including the dispersal of material culture and ideas over great geographical distances, should be regarded as a key constituent in the process of early urbanism.¹²

Sedentism and initial farming in the southern Levant – man's relation to landscape and animals

The narrow Levantine corridor between the Mediterranean Sea and the Arabian Desert – the only land-based path out of Africa – in combination with favourable environmental conditions of the Dead Sea Rift, extending from the Lebanon Beq'a Valley along the Jordan River, has created a concentration of cultural encounters over the last two hundred thousand years, from the Middle Palaeolithic and onwards.¹³

The Inhabitants of the Natufian villages – sedentary or semi-sedentary hunter-gatherers

The Natufians were Mesolithic groups of people that had their core settlements in the southern Levant, including the Jordan Valley in the ancient Mediterranean

8 Giddens 1981, 23, 82–83.

9 This is contrary to Marx, who saw the society as an isolated unit where subversive changes were caused by a self-timing power within the society.

10 This is contrary to most deterministic theories that see man as passively managed by a social, cultural or economic system.

11 Bar Yosef (2009) suggests that this process was initiated earlier, in the last centuries of the cold and dry Younger Dryas period, when some Natufian groups chose to settle down near streams where resources were stable and where they gained knowledge of the life cycle of plants.

12 Algaze 2008; Coward & Gamble 2009, 63; Kohl 1987.

13 Belfer-Cohen & Goring-Morris 2007.



Fig. 1. Map of sites mentioned in the article. By the author.



Table 1. Timeline of archaeological periods and main sites/cultures mentioned in the text. The dates are uncalibrated, except for the Uruk Period.

Oak-Pistachio belt with sites such as Jericho, Hayonim and Ain Mallaha (for chronological periods and sites see *Table 1* and *Fig. 1*). The entire cultural complex extended from the Negev desert in the south to Abu Hureyra by the Euphrates in the north. These groups constitute a fundamental cultural and economic transition from the preceding hunter-gatherers to intensive foraging and a sedentary or semi-sedentary way of life.¹⁴ Their rapid appearance in the final Pleistocene phase (c. 12 500 BP) coincided with favourable climatic conditions in

¹⁴ For the distribution of all Natufian sites in the Levant see Moore 1991, fig. 7.

Plate 2. Natufian grave, human and puppy at Mal-laha (Valla 1998, pl. 2.1). The man's left hand is resting on the dog. By kind permission of Continuum International Publishing Group.



this area.¹⁵ The subsistence strategy of the Natufians indicates a change towards an increase in gazelle hunting and small game such as birds, hare, fox, badger and fish in combination with a storable surplus of vegetable provisions like nuts and wild cereals. This shift in the 'man-land relationship' bound the people to a territory, symbolically marked by numerous graves and permanent, semi-subterranean, rounded dwellings of stone. Unlike the isolated huts of earlier, these semi-subterranean dwellings were more carefully made, included hearths, and were organized in groups, and therefore these sites are referred to as 'Natufian villages'. The burials were often close to the houses and sometimes located under the floors inside them. The material accompanying the dead expresses heavy symbolic meaning, such as cup-marked stones; red ochre; stones placed on or under the head, chest, joints, hands or feet; and animal remains like gazelle horn-cores, horse teeth and tortoise carapaces. Especially towards the end of the period there appears a practice of separating skulls from the skeletons in graves.¹⁶ This practice continues for several thousand years in the ancient Near East, and a similar treatment of the deceased bodies can also be seen in some burial traditions in Scandinavia during the Neolithic.¹⁷

In this period there was not only a shift in people's interaction with the land-

¹⁵ This is now firmly established by local pollen diagrams from the Natufian core area of the Southern Levant (Baruch & Bottema 1991, 18; Leroi-Gourhan & Darmon 1991). Regarding the problems of dating these early periods see Bar-Yosef 1998b, xiv-xvi; 1989.

¹⁶ Ronen & Lechevallier 1991, 157-158; Valla 1991; 1998, 172-173, 176-177; Valla *et al.* 1991, 94-103.

¹⁷ See Mattes, this volume.

scape, but also a change in their attitude to animals. The Natufians' preference for hunting gazelle led to the practice of manipulating this species by sex culling, that is, killing only animals of specific ages and sexes, which is interpreted as proto-domestication – a stage between the management of wild animals and true domestication.¹⁸ The presence of domesticated dogs, and burials containing the remains of both dogs and humans as exemplified by graves on the Hayonim Terrace and at Mallaha (*Plate 2*), hint at a special relationship between man and animal that developed during this period. Whether the relationship between man and dog was affectionate, ritual, or that of hunting partners is, however, difficult to tell.¹⁹

Other cognitive changes in the Natufian period are represented by the evidence for artistic expression, often connected to symbolic behaviour, which first appears in the archaeological record of this area. Examples include human and, in particular, animal figurines as well as engraved stones and ostrich eggshells. In addition there are body decorations made of shells, bone and stone pendants, beads, and the use of ochre. Such body ornamentation is interpreted as mirroring social interaction.²⁰ Kuhn and Stiner compare body ornamentation to technology for social communication, which, depending on the audience, can express aspects of identity such as group affiliation, age, sex, marital status, social standing and wealth. It has also been suggested that the increase in body decoration reflects a growing need to communicate and exert control in the interaction with an increasing number of people, as well as a fundamental change in the ability to carry out social actions through the use of long-lasting exotic objects 'to communicate across large distances or across generations'.²¹ Evidence of early inter-regional networks of exotica in this period is seen in the wide dispersal of shells from far-away places.²²

Were the Natufians sedentary? The abovementioned subsistence strategies together with evidence for self-domestication of the wild mouse into the house mouse and the appearance of self-domesticated House Sparrows during this period, as well as evidence for gazelle hunting in both summer and winter (based on gazelle tooth increments), intensive building activities, and improved tools and artefacts such as larger sickle blades, mortars and pestles – all suggest that the so-called Natufian villages were of sedentary character.²³ However, there are different opinions as to the degree of this sedentism since the settlement patterns also include smaller seasonal camps in mountain and desert areas.²⁴ Burials, figurines and ornaments occur only in the large 'base-camps', which indicates that ritual activities took place when everyone had returned from the seasonal sites.²⁵ According to a recent investigation of refuse disposal strategies at Natufian sites, these groups had not yet adapted their various sanitation practices to the requirements of a full-time sedentary life, as seen in the later Pre-Pottery Neolithic vil-

18 Cope 1991.

19 Davis 1991, 381–382; Tchernov 1991, 327–328; Valla, *et al.* 1991, 102–103.

20 Bar-Yosef & Valla 1991, 6; Kuhn & Stiner 2007; Sagona & Zimansky 2009, 108–109; Valla 1998, 177.

21 Kuhn & Stiner 2007, 47–48, 51–52.

22 Mienis 1987; Reese 1991, 623–624; table 2 and 3.

23 See e.g. Bar-Yosef & Valla 1991, 5–6; Perrot 1968; Tchernov 1991, 326–329.

24 Perlès & Phillips 1991, 639–643.

25 Perlès & Phillips 1991, 643.

lages; instead these practices were adapted to a long-term base-camp stay with sporadic departures.²⁶ However, these might not have included the entire group.²⁷

Sooner or later increasing sedentism impoverishes the local environment because of the exploitation of the landscape. One strategy for such communities was to develop symbiotic relationships with nomadic and hunter-gatherer groups in order to conduct exchange, which was in fact initiated in this period.²⁸ The relationships with neighbouring groups seem to have been friendly overall, since signs of violence are extremely rare in Natufian societies.²⁹

Sedentism based on farming – the pre-pottery neolithic

About 10300 years ago, evidence of early sedentism that was based on farming (pulses, wheat and barley) as well as hunting appears in several places in the Jordan Valley (for periods and sites see Table 1 and Fig. 1).³⁰ A millennium later this economy was supplemented by domestication of animal livestock. The first sheep and goats were followed by pigs and cattle, probably introduced into the Levant from domesticated local game in the Anatolian Taurus and the Zagros Mountains when farming started to appear in those areas.³¹ The Pre-Pottery Neolithic (henceforth PPN) period is, of course, characterized foremost by the change to agricultural sedentism, but it also has other significant characteristics such as the change from rounded, subterranean houses with one or two rooms and dirt floors in PPNA, to rectangular or squarish houses in PPNB, sometimes with plastered floors which differed as to the number of rooms and internal division.³² Published structures are rare but do occur (see the tower of Jericho below). The removal of adult skulls from the skeletons in burials continued in this period, but the skulls were now modelled with plaster or asphalt and the eyes were decorated with shells (*Plate 3*).³³ This treatment, and the finds of buried, painted, plaster statues, is interpreted as an organized ancestor cult. Small figurines of limestone or clay are found in this period, mainly of seated women with accentuated eyes and breasts. This is a change from the Natufian period when most of the figurines depicted animals.³⁴ Triggered by the Neolithization of Taurus, the long-distance trade of objects such as shells, obsidian and greenstone increased as did the inter-societal exchange between communities of different economic structures, such as farming, pastoral and hunter-gatherer communities. The by-product of these exchange systems was the dispersal of techniques and innovations.³⁵

This was again a period of improved climate in comparison to the previous colder and dryer Younger Dryas at the end of the Natufian period.³⁶

26 Hardy-Smith & Edwards 2004, 284–285.

27 Valla 1998, 183–184.

28 Tchernov 1991, 335. An example of the development process of such a symbiotic relationship, although in the Neolithic period between farmers and pastoralists, is indicated at ninth century BP Ain Ghazal (see below).

29 Belfer-Cohen, *et al.* 1991, 421.

30 See e.g. Ain Ghazal (below); Gilgal (Noy *et al.* 1980); Netiv Hagdud and Salibiya (Bar-Yosef *et al.* 1980; Bar-Yosef 1981).

31 Bar-Yosef 1998a, 196; B. Hesse 1982.

32 Banning & Byrd 1989; Bar-Yosef 1998a, 192, 198.

33 See several examples from Jericho in Kenyon 1981a, plates 50–64.

34 Bar-Yosef 1998a, 197–198.

35 Bar-Yosef 1998a, 192–199; Köhler-Rollefson & Rollefson 1990.

36 Baruch & Bottema 1991, 18; Bar-Yosef & Valla 1991, 2–3.



Plate 3. Skulls modelled with plaster and decorated with shells (after Kenyon 1981a, pl. 53a). Courtesy of the Council for British Research in the Levant (CBRL).

The earliest walls of Jericho – a defence against enemies or nature

The Natufians inhabited the earliest levels of Jericho (Tell es-Sultan) in the Jordan Valley, a site that after a settlement gap of almost a millennium (c. 11200–10350 BP) was re-occupied by early farmers of the PPNA stage (for periods and sites see Table 1 and Fig. 1).³⁷ The nearby spring, Ein es-Sultan, in combination with favourable climatic conditions and the alluvial soil of the surrounding wadi systems, constituted a perfect setting for initial farming. PPNA Jericho shows a fully established sedentary village with solid structures consisting of one-roomed circular dwellings with mud brick walls. The floors were sunk below the courtyards, and porches sloped down, with or without steps, into the rooms where a variety of flint and bone tools were found together with limestone dishes and cups. The settlement of this period (c. 10350–8900 BP) expanded comprehensively and rapidly throughout the tell, and comprised an area of approximately four hectares. The population, (over?) estimated to about 2000 inhabitants, is suggested by the excavator to have been largely dependent on agriculture possibly supported by irrigation.³⁸

The most striking architectural structure is the large wall, from c. 10000–9300 BP, ‘encircling’ the settlement soon after its expansion. The western part of the wall is still preserved to a height of 5.75 m. In this part, on the inside of the wall, there was a huge tower constructed of undressed stones, with a diameter of 9 m at the base and 7 m at the top. The tower was solid with no rooms or features except for a central staircase leading to the top of the tower (*Plate 4*). Storage

37 Kenyon 1981b, 1993. Crowfoot-Payne (1983, 664) confirms this period in Jericho as belonging to PPNA. The dating of the levels and architectural features of Jericho discussed in this section follows the suggestions made by Bar-Yosef (1981; 1986; 1989).

38 Kenyon 1993, 676. The estimated population rate should probably be less than half of Kenyon’s suggestion (Bar-Yosef 1986, 157).

Plate 4. The PPNA tower of Jericho (Kenyon 1981a, pl. 9). Courtesy of the Council for British Research in the Levant (CBRL).



buildings attached to the tower hint at its role in the public sphere. The remains still stand to a height of 7.75 m.³⁹

Ancient walls have always been surrounded by myths. Consider, for instance, the later Bronze Age wall in Jericho that was captured by Joshua in the biblical story, or the impenetrable wall of Troy in the Homeric epic. The earliest walls of Uruk are also interpreted as reflecting symbolic rather than defensive values.⁴⁰ Walls are also considered to be the material manifestation of that which by definition separated villages from towns and cities.⁴¹ The latter were defensively motivated and had the organizational capacity and manpower to build them.

Kenyon claims that the wall and adjoining tower of the eleventh millennium BC Jericho together with the rather densely built houses bear witness to a degree of communal organization and a flourishing town life. She further stresses that

39 Kenyon 1981b; 1993.

40 Collins 2000, 40; Liverani 2005, 51.

41 Liverani 2005, 51; Tracy 2000, 1.

the 'urban society [i.e. PPNA Jericho], which succeeded in solving its defensive problems, was able to provide the manpower and the organization needed to create an irrigation system',⁴² although no evidence of such a system is detected at PPNA Jericho. Thus, the great importance of Jericho, as the 'earliest city' in the world, turns mainly on its PPNA wall. However, this exceptionally early town wall is very puzzling, and it triggered a closer investigation by Bar-Yosef.⁴³ He points out that this period was rather peaceful, and there was no need for such a defence system; besides, there are no other fortified sites in the archaeological record from the Near East until c. 5500 BC. From a logical point of view, he further asks why the tower was located on the inside of the wall and not on the outside from where it would be easier to attack enemies. Instead he argues convincingly that this wall, whose remains were only discernible on those sides of the tell that faced the mountain chain, was instead a protection against the annual flooding from the wadi system running from the mountains; thus the wall should be understood as an effort to harness the forces of nature. This interpretation is also supported by the increase in precipitation during this period in combination with the inhabitants' clearing of the landscape by cutting (the protective) woods and bushes, as seen in the archaeological material. Bar-Yosef further suggests that the tower most likely had a mud brick superstructure that might have functioned as a shrine. The later, less substantial, PPNB wall is suggested to have been a terrace revetment that constituted the support for the platform on which the houses were built. In this period the height of the tell was no longer reachable by the flooding.⁴⁴ A similar example of a wall that has been reinterpreted as a retaining wall and support for buildings instead of as a fortification is found in Dimini in later Neolithic Greece.⁴⁵ The later walls of Jericho, however, which originated in the Bronze Age and differed in many ways from the earliest walls, surely functioned as true fortifications of what by that time was the great city of Jericho.⁴⁶

Several similarities, such as the rectangular house forms, the abundant use of plaster, the burials under the floors and the appearance of cult houses, have been observed by Kenyon in the cultural features of the PPNB site of Jericho and the contemporaneous site of Çatalhöyük in central Anatolia, although, as she points out, these similarities should probably be seen as indirect.⁴⁷

Human impacts on the landscape and climatic change at the end of the PPNB

In the Neolithic period, variations in climate were *the most* important factors in the shaping of the Near Eastern landscape.⁴⁸ Nevertheless, human interference also affected the landscape at an early stage of sedentism, as seen by archaeological and palaeobiological evidence. Köhler-Rollefson and Rollefson have studied the situation for early farmers and shepherds at PPNB Ain Ghazal in Jordan.⁴⁹

42 Kenyon 1993, 676.

43 Bar-Yosef 1986.

44 Bar-Yosef 1986, 158–162.

45 Preziosi & Hitchcock 1999, 37.

46 Kenyon 1993, 678–680.

47 Kenyon 1993, 677. Cauvin (1994) however, suggests an expansion of people in the PPNB from Syria and the Levant into central Anatolia.

48 Goldberg & Bar-Yosef 1990, 79–83.

49 Köhler-Rollefson & Rollefson 1990.

They suggest that crop cultivation and goat husbandry initially were a productive combination at this site, since goats cleared the landscape for farming. However, gradually this symbiosis entered into competition with the surrounding landscape of the village. Trees and brush were removed by grazing, which resulted in a scarcity of fuel and material for building construction. The rivalry in grazing also led to a decrease in the wild animal stock, which had so far supplemented the economy of the village. The inhabitants had to compensate this loss with a larger number of goats and other domesticated species. This enlargement in the domestic livestock escalated the conflict between pasture and arable land; hence the range of pasturage increased from a one-day radius to an absence from the site during most of the year, which meant that the herds could no longer be a permanent part of the settlement. Hence, in the course of time there was a dispersal of the population into smaller and economically specialized groups, although they were still in contact with each other. The mobile group, by then pastoral nomads, provided the village with meat and other products from goats, as well as with external goods and raw materials from faraway places, in exchange for agricultural produce from the village.⁵⁰ A new symbiosis, as mentioned above, between two different subsistence groups (herding societies dependent on farming communities and vice versa) was created, which in turn involved these groups in a long-distance exchange network.

The expansive period of PPNB collapsed abruptly in the Levant and Anatolia. According to Bar-Yosef this event was contemporaneous with the climatic crisis, dated to 8400–8200 calibrated BP, which is recorded in ice and pollen cores and in speleothems.⁵¹ He suggests that a series of droughts and the change in the precipitation pattern resulted in lower harvest yields in the villages and extended the search for pastures farther away. A period of social upheaval followed when larger villages were dissolved in favour of smaller hamlets or farmsteads. This led to an increased mobility with flexible subsistence strategies, such as adaptation to pastoral nomadism. The central ceremonial places, which had appeared in PPNB, were abandoned and instead the local shrines became important in the Pottery Neolithic period.

The Pottery Neolithic Village Culture in Anatolia

Despite the similarities between Jericho and Çatalhöyük observed by Kenyon, the Taurus Mountain chain is broadly speaking a cultural, economical and environmental divide throughout the period from the Neolithic to the Bronze Age. This does not mean that there were no contacts and connections through the mountains. The area to the south of the mountains belonged to the Levantine-Mesopotamian zone including southeast Anatolia, while the area to the north of Taurus identified with the central and western Anatolian cultural sphere.⁵²

Two important phenomena, linked to material with opposite implications for social life, can be recognized at the emergence of the Pottery Neolithic (PN) in Anatolia (for periods and sites see Table 1 and Fig. 1). First and foremost, of course, is the invention of pottery; this material made people more attached to hearth

50 Köhler-Rollefson & Rollefson 1990, 6–11.

51 Bar-Yosef 2009, 207–208.

52 Özdoğan 1999; Sagona & Zimansky 2009, 44.

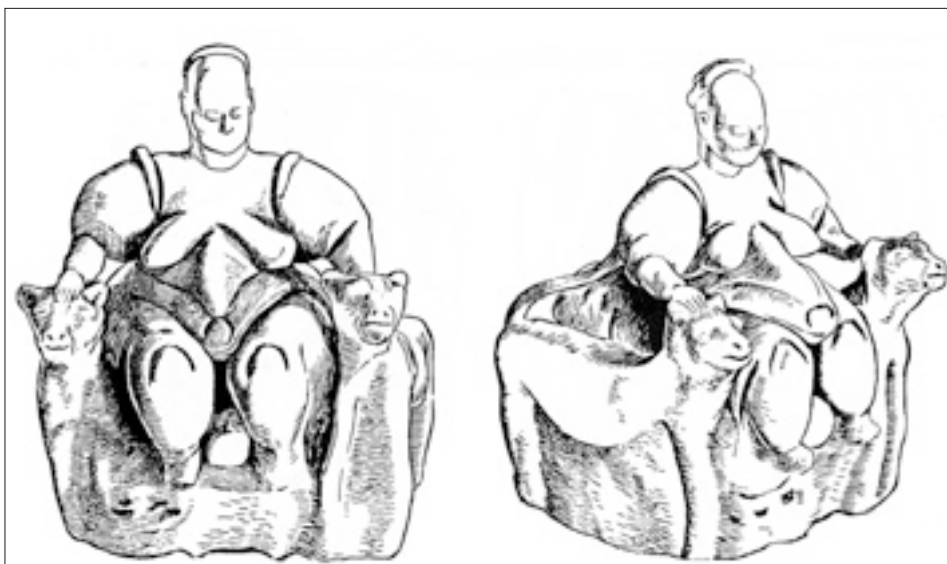


Fig. 2. Figurine at Çatalhöyük suggested to represent the Mother Goddess and 'Mistress of Animals' (after Mellaart 1963, fig. 31). Courtesy of the British Institute at Ankara.

and home, which now became the fixed point in human life. The invention of pottery should be regarded as a developmental stage in the use of clay, a material highly associated with sedentism and rarely used by mobile groups. The location of permanent sites near arable land but far from natural shelters or building material like timber might have been one reason for the start of the use of clay as building material in huts. The demand for storage containers for supplies of food for annual consumption, necessary at permanent sites, might have been another motive and the next stage in exploring this material. Besides, it is suggested that the prolonged use of permanent houses made it worthwhile to decorate them and make them comfortable.⁵³ Sedentism made possible the use and production of items in burnt clay. Many of these had a functional use in the home (cooking pots, storage containers etc.), but there was also a great number of symbolic items in this period. Parallel to sedentism and farming, the production of human figurines in clay, especially female such, increased in comparison to previous periods (Fig. 2).⁵⁴ This interest in female figurines has been observed by several scholars who have interpreted them in various ways, for example as mirroring a fertility cult and/or depicting goddesses; they are also suggested to reflect a change in the social role of women during this time.⁵⁵ A distinction between genders is also seen in wall paintings. As in Egypt three thousand years later, males are painted red whereas women are shown in white. The women are depicted 'fat and plump', as in the figurines, while males are 'tall and slender' (Plate 5).⁵⁶

The other important occurrence in this period was the intensification and reorganization of the obsidian trade, which engaged more people in faraway contacts and in cultural, economic and ideological exchange. This attractive material with possible symbolic implication was involved in extensive trade networks more than 1000 km from the various source areas north of the Taurus Mountains, reaching the southern Levant and several other destinations. Obsidian was

53 Schmandt-Besserat 1977, 149.

54 Cauvin 1994.

55 Cauvin 1985; Mellaart 1962, 57; Sagona & Zimansky 2009, 97.

56 Mellaart 1962, 60 Pl. XIIIa, b, XIVc.



Plate 5. Men performing hunting ritual (after Mellaart 1975, fig. 60). Courtesy of Thames & Hudson.

an attractive material for exchange already in the Mesolithic period. The trade peaked in the sixth millennium BC when it changed from being monopolized by large node settlements such as Abu Hureyra in Syria, Ain Ghazal in Jordan and Çatalhöyük in central Anatolia to being incorporated into a highly diversified trade network that included settlements with an increasing infrastructure along various routes.⁵⁷

Çatalhöyük – the importance of hearth and home

Prestige goods such as obsidian, fine-grained flint, copper, greenstone, dentalium shells, gypsum and vesicular basalt did not occur naturally in the area of Çatalhöyük and had to be imported to the site, to maintain its wealth and position. The organization of the trade varied for the different materials. The trade with neighbouring communities is suggested to have been carried out through direct access or by so-called wandering pastoralists, that is, itinerant ‘traders’ who provided special services and exotic goods. Analyses show that obsidian was brought mainly from the Acigöl area of central Anatolia and was extensively prepared before it reached the site.⁵⁸ Obsidian had a significant position at Çatalhöyük where it was found in caches inside the houses, under the floor near the ovens and the entrances. Hodder regards the obsidian as having socio-symbolic value.⁵⁹

However, too little has been studied regarding trade at Çatalhöyük, where instead the main concern has revolved around the hearth and the home. Mortars, querns, ovens and deposits of carbonized wheat, peas and seeds bear witness to an economy based on farming but supported by hunting, as seen by finds of arrowheads and javelin heads, frescoes, paintings and bone remains.⁶⁰ According to Hodder the house and activities connected to it constituted the most significant sphere and phenomena for the people who lived at the site.⁶¹ The reasons for this may be related to the introduction of pottery and a sedentary lifestyle, as well

57 Conolly 1999, 72; Sagona & Zimansky 2009, 73.

58 Conolly 1999, 70–73.

59 Hodder 2006, ch. 7.

60 Mellaart 1962, 56.

61 Hodder 1990, 2006.

as to the agricultural economy, which in turn brought about a new ontology reflected in different ritual and cultic expressions performed within the domestic area or in house-like shrines. The focus on the house and the home might also be ascribed to the research methodology at the site. The very meticulous contextual approaches so far used in the renewed project at Çatalhöyük have opened up for innovative interpretations regarding domestic, symbolic and spiritual aspects of the village life; but at the same time they might have overshadowed questions of more economic and socio-political character. This discrepancy will hopefully be balanced in the future.

During its long lifespan, 7200–6000 BC (calibrated ¹⁴C years), an unusually stable continuity and conformity regarding the town plan and the house architecture prevailed at Çatalhöyük.⁶² According to the excavator, this conservatism was maintained through historical-mythical traditions reflected in the symbolic images and shared histories of humans and animals, with a preference for leopards and bulls as seen by depictions on the walls of the main rooms as well as in reliefs and large sculptures of, for instance, plastered bull-horns fixed to the walls and set in benches. The longevity of the settlement is also due to highly controlled rituals based on the ancestor cult, as revealed in burials under the floors of the main rooms, in which the heads were often removed from the skeletons and sometimes also plastered (cf. the abovementioned Natufians and PPN people in the Levant). Exaggerated repeated plastering of walls and floors in these rooms (sometimes as much as 450 times) seems to have a connection with the burial rites; other repetitive patterns of keeping the houses in repair by using the old walls and plans bear witness to a deeply rooted conservative building tradition.⁶³ This tradition was especially seen in levels VII–VIA, which were very densely built-up (Fig. 3). The access to the houses was via ladders through roof openings that also served as smoke vents. It became very impractical to reach the houses in the centre, which seem to have been ritual buildings. This dense neighbourhood is suggested to have manifested a kind of group identity but might just as well have functioned as a defence system against foreigners and enemies.⁶⁴ However, recent research shows that in level V (from around 6500 BC cal. ¹⁴C) there was a change, perhaps after a fire, towards more open space and larger houses that were more accessible through ordinary door openings. The cult houses, now located on the fringes, also became more accessible. Building continuity was abandoned, and the individual buildings now seem to have lost their historical significance.⁶⁵ Might these changes signify a shift in group identity at the site, occasioned by the arrival of newcomers?

Hodder claims that despite its large size (approx. 3500–8000 inhabitants) Çatalhöyük does not show any of the typical features of a town; it has no evidence of public spaces, administrative buildings, elite quarters, real craft special-

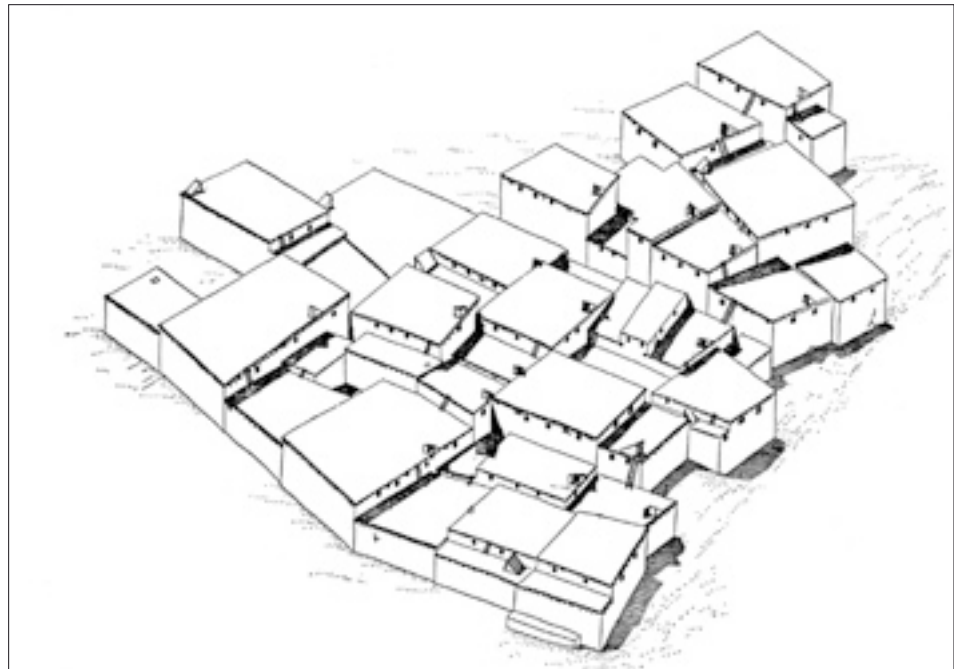
62 Düring 2001, Hodder 2006.

63 Hodder 2006, Ch. 6, 136; see also Hodder 2005 for a discussion on the conservative expressions in the houses as reflecting memory on an individual level. For illustrations and discussions of paintings and sculptures see e.g. Mellaart 1962. Mellaart sees at Çatalhöyük various cult influences, e.g. ancestor cult, fertility cult, bull cult and hunting cult, in the artistic expressions of images, sculptures and figurines as well as in burial customs (1962, 51–57). Hodder interprets these images somewhat differently and relates them to cognitive expressions of the inhabitants' adjustment to the introduction of agriculture (1990).

64 Sagona & Zimansky 2009, 88.

65 Düring 2001.

Fig. 3. Reconstruction of a quarter at Çatalhöyük, level VI (after Mellaart 1963, fig. 6). Courtesy of the British Institute at Ankara.



ization, or social stratification, and therefore he interprets it as a 'very, very large village', which probably had some kind of committee of elders whose task was to organize activities and see that law and order were kept.⁶⁶

Towards complexity and commercial networking in Upper and Lower Mesopotamia

From the late fifth to the early fourth millennium BC the impact of human society on the environment increased considerably and in some places became the most crucial explanation in the transformation of the Near Eastern landscape. These environmental changes can be related to the emergence of, and degree of complexity in, societies and their control of raw material extraction in other distant human communities. The development of urban centres was based on a surplus extracted from, for example, stock breeding and grazing, agriculture, mining activities, and the terrestrial and maritime movement of goods – activities that consequently led to deforestation, draining, salinization, alluviation and other effects on the landscape.⁶⁷

To understand the process of the earliest urbanisation in the ancient Near East we have to study both the development of its core area, and thus the sites of the Lower Mesopotamian alluvial plain in the south, as well as the emergence of pre-states in its northern periphery in the Upper Mesopotamian and Euphrates area, which comprised parts of northern Syria and eastern Anatolia. The Late Chalcolithic period in Anatolia and northern Syria corresponds roughly to the various stages of the Uruk period of Lower Mesopotamia (4200–3100 BC).⁶⁸ Between

⁶⁶ Hodder 2006, 95–98.

⁶⁷ Goldberg & Bar-Yosef 1990, 71–86.

⁶⁸ Sagona & Zimansky 2009, 147 and references therein.

c. 3800 and 3100 BC these areas became increasingly involved in interaction, a phenomenon called the 'Uruk Expansion', which is indicated by the appearance of south Mesopotamian (Uruk) cultural elements in the north and in a few sites in the east (for periods and sites see Table 1 and Fig. 1).⁶⁹ This interaction was one of the main factors in the urbanisation process.⁷⁰ The environmental differences between Upper and Lower Mesopotamia in combination with various emerging social ideologies gave rise to the different development trajectories in the sites in these two regions.

Upper Mesopotamia

The landscape of Upper (or northern) Mesopotamia is divided into small, distinct, geographical areas of mountains, plains and river valleys, the latter of which sometimes cut deeply into the landscape. These natural conditions restricted the interaction between states and their hinterlands as well as between the states themselves, and this resulted in more dispersed and smaller agglomerations than in the south.⁷¹ Yet distinct regional centres emerged, as evidenced by the similarities in pottery types within these regions.⁷² Agriculture based on rain-fed dry farming as well as sheep and cattle herding constituted the economical base in Upper Mesopotamia, together with resources that were lacking in the south such as wood, metal and obsidian. Finds of crafted prestige items of imported materials such as lapis lazuli, gold and silver at these sites demonstrate their involvement in international long-distance trade, which is further testified by several stamp seals and sealings at important sites like Arslantepe (see below) and Nineveh.⁷³ The blow-pipe smelting of copper into tools cast in moulds was a great technical breakthrough in the fifth millennium BC in Anatolia, and was one of a range of revolutionary inventions that triggered material, and hence cultural, exchange between different environments.⁷⁴ The copper metallurgy tradition was, for instance, probably the main reason that the Lower Mesopotamian states became interested in Anatolia in the fourth millennium.⁷⁵ The divided and multifaceted social structure of Upper Mesopotamia made it less dependent on communal efforts and large-scale organization, in contrast to, as will be seen, the situation in the south.

In this Syrian-Anatolian area the emergence of large societies started to crystallize at the end of the fifth millennium BC.⁷⁶ One such society was Arslantepe in eastern Anatolia, which constituted the northern periphery of Greater Mesopotamia. This was an extensive site with monumental architecture and with archaeological evidence of some form of administrative record keeping and an area that indicates craft specialisation. There was also an imposing (elite?) building with wall paintings and plastered columns at the top of a mound, as well as a ceremonial building, a temple, that showed evidence for storage and the distribu-

69 This period and culture is named after the main site of the Southern Mesopotamia, Uruk/Warka.

70 E.g. Algaze 2005, 2008; Stein 2005b.

71 Algaze 2008, 144–146.

72 Lupton 1996, 35.

73 Collins 2000, 12, 15; Lupton 1996, 38.

74 Sagona & Zimansky 2009, 139.

75 Stein *et al.*, 1998, 174.

76 Sagona & Zimansky 2009, 145; Stein *et al.*, 1998

tion of commodities. The latter is reminiscent of the ceremonial buildings from Lower Mesopotamia. The domestic buildings were rectangular, and the ancestors were buried under the floors. In the mid-fourth millennium the decorated high-quality pottery, produced within the households, gave way to a standardized pottery mass produced on fast wheel in central workshops. All of this evidence shows an independent growth towards complexity and should, according to the excavator, be seen as 'a form of Early State without "urbanisation"'. Especially the later phase of this process was stimulated by the prevailing interaction with the southern communities of the Upper Euphrates Valley.⁷⁷

Also at the southeast Anatolian site of Hacinebi Tepe there is evidence of monumental buildings, advanced techniques in copper metallurgy and pottery production, as well as seals and sealings, all of which shows that Hacinebi, like several other Anatolian and Syrian sites (e.g. Hassek Höyük, Tell Brak and the abovementioned Arslantepe), was a highly developed society already before the involvement of the southern Uruk cultures.⁷⁸ Yet, these sites should not be classified as urban centres similar to those that started to grow in the southern alluvium plain of the Lower Mesopotamia. City-states, like those in the south, did not evolve in Upper Mesopotamia until the mid-third millennium BC.⁷⁹ Nevertheless, recent research shows that the development in the north was more dynamic than previously thought.⁸⁰ Sagona describes this process as 'one of a mosaic of interacting polities... each of which reacted differently to the Uruk impact'.⁸¹ So, these northern sites were involved to a very high degree in the process of urbanisation that took place on the southern plain.

Lower Mesopotamia

A variety of ecosystems provided a multitude of agricultural and other products on the large alluvial plain of Lower Mesopotamia (Fig. 4). Orchard and garden crops, especially dates, were grown close to permanent watercourses.⁸² The arable land was interspersed with rough land and harvested fields, which were used as pasture for cattle. The swamps in the far south provided wildfowl, fish and other small game as well as building material such as mud, palms and reeds. Additionally, the Tigris-Euphrates river systems constituted an enormous natural transportation and information network.⁸³

The constantly changing courses of the river branches made people flexible in regard to land conditions and supply. Crop failure at one place could be managed through acquisition of food from another place, thus forming risk-buffering networks facilitated by the system of rivers and marshes. The unstable character of the landscape is suggested to have produced a common south Mesopotamian ideology based on order and stability with an 'overarching religious affiliation'.⁸⁴

According to information in later written documents, which probably also should be valid for at least the later part of the Uruk period (for periods see

77 Frangipane 1997, 49; 2000.

78 Stein *et al.*, 1998.

79 See e.g. Cooper 2006.

80 See e.g. Frangipane 1993, 1997, 2007.

81 Sagona & Zimansky 2009, 147.

82 Powell 1990; concerning gardens see Pedersén this volume.

83 Algaze 2008, 41–54.

84 Collins 2000.

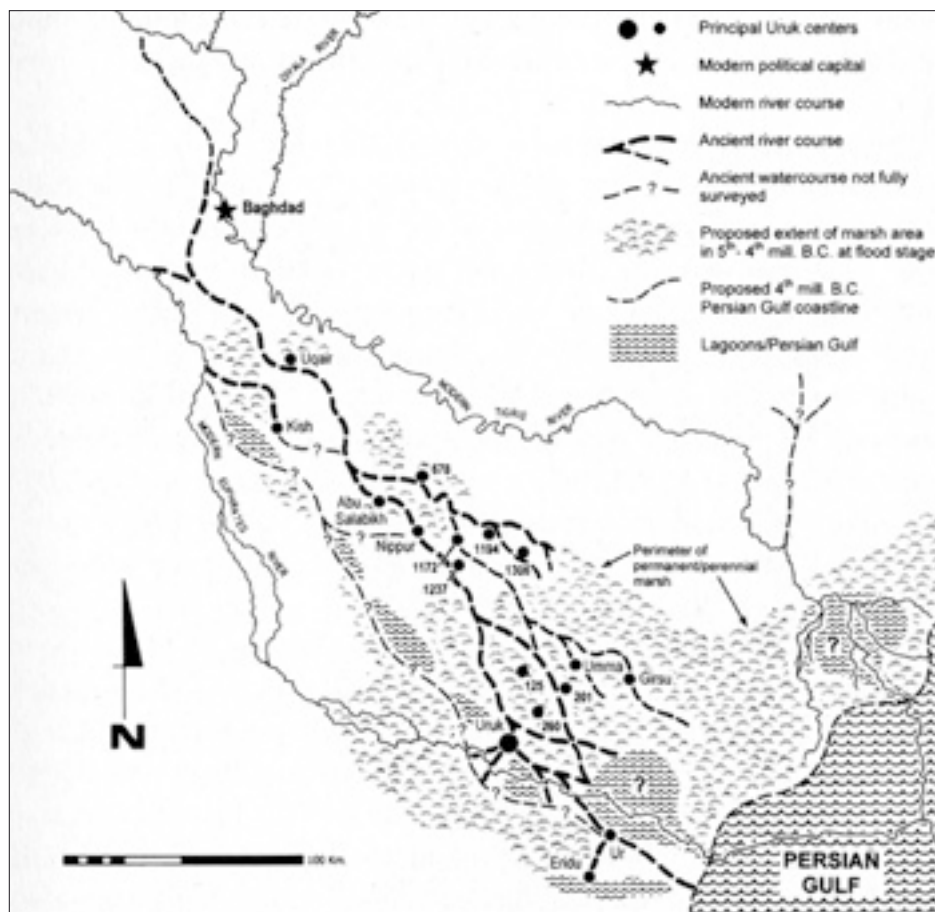


Fig. 4. The Mesopotamian alluvium, late fifth and fourth millennia BC (Algaze 2008, fig. 5). Courtesy of the University of Chicago Press.

Table 1), the temple was integrated into the community in Mesopotamia and, besides securing the survival of the state by serving the gods, it was involved in the organization of human daily life such as ceremonies, burials (although almost no archaeological evidence of burials are found in Lower Mesopotamia), financial affairs and festivals. In exchange for these services the rulers and the people provided the temple with financial support, taxes and offerings, and thus a kind of interdependency existed that formed a communal whole.⁸⁵

A system of 'embryonic city-states' is suggested to have existed already in, or just before, the Early Uruk period in southern Mesopotamia. During the Uruk period the population was absorbed into centres in the south through migration from peripheral areas, which stimulated the process of urbanisation. At the end of the Uruk period a population of about 100000 people is estimated to have inhabited the main parts of the area surveyed in the southern alluvium – a population density two to three times higher than in Upper Mesopotamia. Primary among the alluvium centres was Warka, also known as Uruk, which comprised an area of 250 hectares. According to available data, Warka was four to five times larger than the nearest second tier site. This fact might be explained by randomness of discovery in the, in parts, poorly surveyed areas and by the geomorphologic processes that changed the course of the Tigris and Euphrates. These processes could have obscured smaller and even larger sites. The superiority of Warka is further suggested to reflect its religious rather than political importance, which could account for later evidence of tablets revealing ritual offerings that were sent to Inanna of Uruk from other cities. It is also reflected in the great religious ar-

⁸⁵ Collins 2000, 11–20.

chitecture of the Anu Ziggurat area and the Eanna precinct.⁸⁶ However, the most plausible reason for Warka's primacy, and that of the alluvium as a whole in the Uruk period, was its favourable location and natural conditions which were conducive to both agricultural production and regional and interregional trade (Fig. 4). It was close to the regional delta eco-system, the fertile plain and pastureland, and had access to navigable marshes and river transportation in a time when the domestication of the donkey fuelled the long-distance trade to obtain raw material from the Upper Mesopotamian areas.⁸⁷ All these aspects were important in the explosive process of urbanisation that occurred in southern Mesopotamia in the second half of the fourth millennium BC.

The urbanisation process of Lower Mesopotamia

In the second half of the fourth millennium, Upper and Lower Mesopotamia no longer developed in parallel. The natural advantages of southern Mesopotamia made possible an efficient administrative and religious organization of the state which in turn enabled the revolutionary expansion of these communities, whereas the societies in the north did not have the natural conditions to grow at the same rate. Accordingly the focus of the process of urbanisation in the mid-fourth millennium was on the southern alluvial plain.

Agricultural innovation in the form of sloping long fields irrigated by means of furrows leading from canals was a great invention when compared to the former, small, family fields watered by inundation. Long fields together with technological innovations like the seeder plough, the threshing sledge and clay sickles brought about a production increase of about five hundred to a thousand per cent – an early example of a green revolution. Crucial for these developments was a central 'coordinating agency' (the temple and later also the palace institutions),⁸⁸ which from the very beginning of the creation of the long fields was likely to have been the organizer of these activities. The surplus was used to increase the agricultural infrastructure, defence, and to maintain specialists and administrators.⁸⁹ The emergence of huge temple buildings in this period mirrors the importance of this institution as a means to control the labourers and thus the surplus, since 'the temple was the only institution that could convince producers to give up substantial parts of their work for the advantage of the community and its administrators, represented by their divine hypostases'.⁹⁰

The rulers needed resources to construct the monumental buildings (e.g. temples and palaces) as well as for luxury items, in order to legitimise their power. Paradoxically the alluvial soil of Mesopotamia did not contain sufficient raw materials, and hence these had to be obtained from distant places. The cost advantage of water transportation of necessary imports such as wood was considerable compared to land transport; this was, of course, also valid for the export of bulk goods such as grain and wool textiles.⁹¹ Evidence of direct interaction between

86 Algaze 2008, 108–115.

87 Algaze 2008, 116.

88 The matter of the interlacing nature of religion and royal rule in the ancient Near East has recently been discussed in publications and congresses, see e.g. Olmo Lete 2004; Porter 2005.

89 Liverani 2005, 15–22.

90 Liverani 2005, 25.

91 Algaze 2008, 41–54.

Lower Mesopotamia and southeast Anatolia – what is suggested to be the world's earliest colonial trading system – is found, for instance, at Hacinebi Tepe from the first half of the fourth millennium.⁹² The archaeological remains at this site as well as at other colonies such as Sheikh Hassan, Habuba Kabira and Jebel Aruda show intensive interaction with the south Mesopotamian core area. In addition to colonies there were also smaller enclaves and trading outposts established by the Uruk administration.⁹³ Whether this interaction between Upper and Lower Mesopotamia should be seen as an unequal centre-periphery relation or as part of a larger intercultural interaction network is difficult to tell.⁹⁴ However, there are several similarities between the Mesopotamian trading system and the organization of the later Old Assyrian colonial trade (c. 1800 BC), of which the *karum* (colony) in Kaneš is most well known through the thousands of written documents found at this site.⁹⁵ The Old Assyrian trade was part of a vast interaction network extending from the Mediterranean Sea and the Anatolian plateau, southwards to Babylon and southeast to Afghanistan and Iran, and further to the Indus Valley.⁹⁶ In the Uruk period much of the raw material (e.g. lapis lazuli, gold and silver) that Lower Mesopotamia obtained as refined goods from the Middle and Upper Euphrates was not locally available at these latter places but had to be imported. This indicates that these sites were also involved in extended network systems.

The city-state was divided into a) the city proper, where the religious and political administration was located and where the elite, craftsmen and other specialists resided; and b) the surrounding villages, from where the labour was obtained. In the city the surplus was kept in the temple stores, and from there it was redistributed. This procedure, including the administration of the colony trade, required the keeping of records in written form – an innovation that developed when the existing pictograms were combined and abstracted into cuneiform signs on clay tablets.⁹⁷ The oldest evidence from the initial phase of writing derives from the Uruk colonies in Upper Mesopotamia in the mid-fourth millennium, and consists of signs on seals, bullae and tokens used as administrative tools in the handling of trade goods.⁹⁸ Besides writing, several other innovations appeared parallel to urbanisation. All these new expressions show cognitive changes in the way that humans perceived the world, for instance regarding concepts of time, space and value. Liverani claims that a 'standardization of reality' occurred during this period, and hence the necessity of 'computing and cataloguing' to meet the needs of the temple administration,⁹⁹ the latter of which managed most of the administrative matters within the city-state as well. This standardization is seen, for instance, in lexical texts (used for the training of scribes) and in the standardized range of forms and dimensions used when making vessels for spe-

92 Pearce 2000, 42; Schwartz, Hollander & Stein 2000, 81–82; Stein 2000, 2005b; Stein & Edens 2000, 170.

93 Algaze 2008.

94 Regarding the Core/Periphery perspective see e.g. Chase-Dunn & Hall 1993; Hall 1999. Regarding Interregional Interaction Networks see Stein 1999a, 1999b.

95 Regarding the Old Assyrian trading system, see e.g. Larsen 1976; Özgüç 2003; Veenhof 1995. See Stein 2005b for a comparison between the Old Assyrian and the Uruk trading systems.

96 Larsen 1976, 227; 1989.

97 Glassner 2003.

98 Glassner 2003, 45 figs. 2.3.

99 Liverani 2005, 57–59.

cific purposes. It is also seen in the estimates of labour in 'man-day' units, and in rations that are calculated on parameters of age, sex, rank and specialization. Space depended on linear measures which were based on human body parts (forearm, thumb etc), the proportions rounded off to fit into the sexagesimal system on which all calculations (time, space, area, volume and even value) were based and which were thus multipliable and dividable by using the relationship of 1:6, 1:60, 1:360 etc. An administrative calendar with a year of 360 days, 12 months and 30 days was used, with five or six (feast?) days inserted at the end of the year to compensate the difference.

The urban revolution also brought about a new concept of a polytheistic religion. The pantheon was structured along the lines of anthropomorphic relations such as kinship, hierarchy and professional specialization; each earthly activity was supervised by a specific god. Thus, the real world was reflected in the religious ideology, which along with myths and proverbs – collected in wisdom texts – guided and motivated the people of Lower Mesopotamia to make contributions to the central agency.¹⁰⁰ The end of the Uruk phenomenon is still an enigma and needs more research, not only at the south Uruk sites proper but also in the so-called peripheral areas. The seeds of its collapse might paradoxically also be sought in the cultural encounters in the colonies and enclaves, in the repercussions these encounters had on the inhabitants of the south Uruk societies, and in these inhabitants' relation to their very strict socio-religious ideology.

Concluding remarks

[T]he basic fact remains that the development or cultural evolution of any society is dependent on its relations with other societies; that cultures are open, not closed, systems; and that studies, be they based on excavations of a site or settlement data from surveys of precisely defined, well-demarked, but bounded areas, that fail to consider broader patterns of interaction are necessarily incomplete and partial.¹⁰¹

Exchange and cultural contacts were part of people's everyday life since the very first sedentary and semi-sedentary societies in the ancient Near East. The motive for this interaction, as seen in the archaeological material, was to obtain raw material and special goods not found naturally in the society's own environment or economy. These cultural and economic encounters were initially mostly direct but were also structured in networks for the procurement of exotic faraway materials such as shells and obsidian. Shells and other exotic goods were often used to express identity and status in body decoration, and thus represented face-to-face interaction by the use of material in a symbolic way – a developmental stage of cognition called 'material symbolic' that began at the time of sedentism.¹⁰² The interaction between societies of various cultural and economical structures promoted the dispersal of material, ideas and innovations connected to economy (e.g. farming, animal domestication, herding) and ideology (e.g. burial customs, cult and symbolism) over large areas of the ancient Near East. Interaction was

100 Liverani 2005, 63–65.

101 Kohl 1987, 1–2.

102 Renfrew 2007, 113.

not always intense; at Catalhöyük domestic and cultic needs seem to have been prioritized over external acquisition, which is reflected in the conservative building plans that prevailed for a long time and eventually led to an unbearably dense village situation.

Environmental advantages stimulated the more rapid development of some societies before others. Such advantages could be found in the multiple eco-systems of the Lower Mesopotamian alluvium where early urban societies started to form. Agricultural innovations and economic networks, based on regional interaction and long-distance colonization of Upper Mesopotamia, were made possible through the religious administration in the south. This elite was able to control and use the agricultural surplus for own interests in order to obtain refined, exotic, raw material. The complex administrative situation required external memory storage in the form of writing and standardized means of registering, calculating and measuring. This phase of human cognition is called the 'theoretic stage' and reflects a new, and theorized, way of perceiving the world, characterized by external data storage located outside the human brain and body.¹⁰³ For the elites such means were necessary when managing the growing cities and their populations in the urban landscape of Mesopotamia.

Interaction, both social and economic such, is in itself deeply rooted in cognitive expressions closely connected to the dispersal of material culture and ideas over extended geographical areas, which accordingly promoted the different forms of development and change in societies.

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103 Renfrew 2007, 113–114, following Donald 1991.

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3. Climate Change, Ecology and Early Sedentism in Interaction: Visible Traces of the Early Urban Mind in Continental and Northern Europe

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ABSTRACT

This chapter presents archaeological examples of visible aspects of the urban mind. Sites in northern, western and central Europe are used to illustrate different facets of the early urban mind and the links to sedentism, ecology and climate change.

Like the global population of today, the Neolithic people had to confront changes in climate as well as the fact that ‘modern life’ caused environmental degradation. The transition from a nomadic hunter-gatherer lifestyle to sedentism and farming radically influenced and changed the landscape and had a destructive impact on the surrounding ecosystems.

Following the geographical dispersion of this process, the chapter begins with the Fertile Crescent and moves across eastern central Europe to middle Germany and then to selected places linked by the phenomena mentioned below. Archaeological sites in the Orkney Islands of northern Scotland, the pile dwellings of the circum-Alpine region and sites in eastern middle Sweden all represent instances of early sedentary life, house and road building, the invention of wheeled transport, and community networking. Last but not least cultic rituals of the Stone Age are presented, and their cognitive background as part of early human identity is discussed.

Introduction

The dispersal of Neolithic culture, and the reasons for it, is a classic and sometimes hotly debated topic in archaeology. It is closely connected with the expression ‘Neolithic Revolution’, an archaeological term coined by Gordon Childe to describe the transition from hunter-gatherer communities living a nomadic lifestyle to agriculture and stock sourcing of food and seeds. The appearance of

agricultural systems is often linked to sedentism.¹ Important archaeological characteristics generally connected with the Neolithic are the making of stone tools and pottery. These cultural elements appeared in different places of the world in different order and at different times. At present the prevailing theory among researchers is that these great changes occurred in different places independently of each other, for instance in North Africa, southern China, Middle America and the Near East. The last mentioned is a region called the Fertile Crescent which includes the Levant, Mesopotamia, western Iran and the Egyptian Sinai-peninsula, where the oldest urban cultures such as Jericho, Aleppo and Çatalhöyük appear in c. 10000 BC or even earlier. This is a time period for which both cultural and climatic changes are documented. The period marks the shift between the end of the Pleistocene (Ice Age) and the beginning of the Holocene. The onset of the postglacial period is seen as the most probable factor for the initiation of agriculture, as moister springs and winters led to an increase in the availability of food like wild cereals. Early farming in the Fertile Crescent started with domesticated plants such as spelt, einkorn wheat and millet, and with the keeping of dogs, goats and sheep. By about 8000 BC cattle and pigs were domesticated.

Climate change was almost certainly an important factor behind the great change in people's lifestyle, but other possible reasons are also debated. As the Neolithic process was a long and varied procedure rather than a short and homogenous one, a variety of possible reasons must be taken into consideration. The process was even heterogeneous in development and timing in diverse geographical regions, and even within an area that constitutes a single country today. In Germany, for instance, there are three main zones where early farming cultures appeared, though not at the same time: the low mountain range with its loess areas, the flat north German plain, and the alpine uplands.²

Neolithic dwellings in central Europe

Unlike the archaeology of the Near East, there are no written sources from prehistoric Europe. No documents written by people of the past tell us about the way they thought. We do not know what relation they had to the past or the future, and we do not know whom or what they worshiped. Here the only possibility to acquire knowledge and data is to read the archaeological record. It is not possible for archaeologists to reconstruct the exact thoughts of prehistoric humans, but their remains reveal how they lived and can point to some interesting cognitive aspects of the past. Huts or houses comprising the core of settlements give valuable information about the size, economy, and occasionally even the social structure of a past society. The earliest huts were non-permanent constructions, while the overall impression is that the more permanent constructions, often rectangular houses, are connected to the early farming cultures, the so-called ackerbauende Kulturen.³

1 There is an ongoing debate in current research as to whether sedentism is a classification criterion for Neolithization.

2 Lüning 1996, 233–247.

3 Stäuble 2005, 117.

The early farming culture in Europe, known as the Linear Pottery culture,⁴ flourished around 5580 BC in the east, with the Starčevo-Körös culture as a possible predecessor. Some centuries later this culture appeared in the area of the middle Rhine, around 5400–5200 BC. The main concentrations of the Linear Pottery culture stretched along the great rivers – on the middle Danube, the upper and middle Elbe, and the upper and middle Rhine, but also along the river Weichsel into the north German plain. In a later phase this culture reached the Paris Basin, around 5010–4919 BC. The breeding of cattle was most likely a central aspect of this process. The reason that this culture spread so quickly over such a great distance is not known for sure. Whether it was due to Danubians migrating into other parts of Europe, and farmers bringing with them animal husbandry, or alternatively to the domestic Mesolithic population simply adopting the new Neolithic lifestyle in the places they were already living, is a hotly contested issue in research.

Accompanying this process were visible effects of the exploitation of the environment by people. Their need of space for settlement and pasture slowly changed the ‘open’ and ‘natural’ landscape into, for instance, a ‘cultural landscape’.⁵ The people first settled in the valleys along the rivers, and in a later stage they gradually explored the mountains. The entire process stretched over a time span of more than 2500 years and was connected with several changes in the way of life and in the way people settled.⁶

From a global perspective, the early farmers were the first humans to live in houses. The people living in the area of the Indus around 6000 BC built their houses of clay bricks, while dwellings in the Balkan area differed distinctly from those in the previous hunter-gatherer encampments already from the start. They were made of vertical timber posts with wattle and daub, covered with clay on both sides. Curiously enough this building technique spread throughout Europe, finally reaching Scandinavia. In general two different floor plans are known for early houses: circular building styles and rectangular ones. The early farmers of central Europe erected longhouses with a rectangular or trapezoid floor plan (see below).

A house is not only a shelter from the elements and a place for social and economic relations. In traditional societies it is also often the place where life begins and life ends, and it also has a symbolic meaning. To the contemporary mind, the house is often associated with positive images such as ‘family’, ‘safety’ and ‘rest’. It is considered to be a fixed node of human existence, the location of hearth and home. In short it represents the private sphere, a powerful icon of stability and permanence. Hodder uses the term ‘domus’ to outline the concept of the house: “The domus as defined here is the concept and practice of nurturing and caring, but at a still more general level it obtains its dramatic force from the exclusion, control and domination of the wild, the outside.”⁷ Of course the ideas

4 The so-called Linearbandkeramische Kultur or Bandkeramische Kultur, in abbreviation LBK and BK, respectively.

5 In this case the terms ‘natural’ and ‘cultural’ are used to express the differences in one and the same landscape; when the landscape is ‘natural’ it is not being used for anything but hunting and gathering, while ‘cultural’ expresses the visible interference of humans in the landscape, for instance by changing woods into fields.

6 Lüning 1989, 10–11.

7 Hodder 1990, 45–46.

connected to the house have most certainly changed over time,⁸ but there is no doubt that the house had an important status and a symbolic meaning throughout prehistory. Archaeologists find proof for this in various features and even in ritual artefacts. The so-called house urns are among these objects. Urns in the shape of houses are known from Italy and Scandinavia. These sepulchral vessels containing human ashes are dated to the Bronze Age and show very clearly that they were intended to be a house or even a home for the dead.⁹ Furthermore the existence of house cults and many rituals closely connected to buildings are known to exist from the Stone Age until recent times.¹⁰

As opposed to the artefacts which changed shape and style rather quickly and which show a great number of regional variations in type and form all over Europe, house architecture is a rather conservative element. The main structure and function of houses remained relatively constant.¹¹ In view of the symbolic content of houses, this common cultural development can be seen as an early expression of a direct cultural identity – the origins of an early urban mind visible in the regions that constitute present-day Europe.

During the 800 years of the Linear Pottery culture (from c. 5600 to 4500, depending of course on the region in question) many details in house construction changed. Central European longhouses often measured as much as 40 x 8 m and the smaller ones about 20 x 5 m. They usually consisted of a structure of three parallel rows of posts, often northwest-southeast orientated. Stäuble observed a general uniformity among the earliest LBK houses, but also individual floor plans and individual aspects of construction.¹² The houses were often trapezoid in shape, with a broader narrow side that opened to the south. In addition to practical reasons such as having the entrance face the ‘mildest weather side’, there may have been a symbolic meaning in this particular choice. Younger houses were often divided in their south section.¹³ Early longhouses functioned as dwellings and most likely also as storage space. Storage is another visible aspect of the early urban mind as it proves the ability of prehistoric peoples to think ahead and plan for the future.

The phosphorous content documented in the houses does not show high values, which means that animals were not kept inside the buildings. In summer time the early farmers kept their cattle in pastures far from the dwelling sites. (This is similar to present-day transhumance systems in Spain and Greece and to the old Fäbod system in Sweden). This opens for the possibility that some members of the community were seasonally absent on account of herding.

The number of inhabitants in such a longhouse, or ‘Wohnspeicherhaus’, has been debated. Lüning assumes one nuclear family per building and about six to eight people in total. The maximum number of inhabitants per longhouse is, however, currently estimated at ten people.¹⁴ The documented features at archaeological sites in western Germany show that a longhouse probably lasted for 29 years in average. This equals one Neolithic generation. The smallest thinkable number of people able to run a farm is assumed to be five to seven persons. An

8 Bailey 1990, 26.

9 Mattes 2008, 129.

10 Mattes 2008, 130–136.

11 Stäuble 2005, 262; Lüning 1989, 10–12.

12 Stäuble 2005, 261.

13 Stäuble 2005, 262.

14 Biermann 2001, 8.

area of 1.8 ha arable land is estimated for a group of this size. A general calculation, based on six people per household, gives a population density of 16.7 individuals per square kilometer for middle European loess areas in central places during the optimum phase. Comparative values estimate 30 persons per square kilometer for late medieval times.¹⁵

Neolithic agriculture

The houses of the LBK stood either singly or in small groups, occasionally forming hamlets, villages or prototypes of these close to or along rivers. The size of the houses varies and is often difficult to determine due to soil conditions and poor preservation. It was not until the 4th millennium BC that enclosed settlements and town-like constructions were found in Europe.

Another key innovation during the Neolithic is agriculture. Its basic structure of crop rotation, in order to avoid a decrease in soil fertility, is still maintained in farming today. The agricultural system changed during the BK and is most likely an adaptation to changes in the climate and vegetation. It was 2–3 degrees Celsius warmer in the Neolithic than today, and also more humid. A huge part of Germany was covered with Atlantic western deciduous woods consisting mainly of *Quercus* and *Tilia* or solely *Tilia*. In the dry continental east, from the river Elbe to the Mittelgebirge, Pinales were also found. The arid regions which breached, for example, parts of middle Germany were steppe, more explicitly a 'Waldsteppe'.¹⁶ The areas near the Harz Mountains are part of the so-called mitteldeutsches Trockengebiet.

The great diversity of the tertiary flora of the glacial period declined, while in the postglacial period vegetation was subject to constant alteration. But climate change was not the only reason for changes in the vegetation structures. Complex interactions of various parameters came into play. The new lifestyle of humans transformed the landscape and its ecosystems. Woodland clearance made space for fields and settlements, the timber used as building material and firewood. The formerly natural woods were now used as woodland pasture for cattle, a domesticated species best adapted to this strategy as it was more suited to the surroundings in question than pigs, goats and sheep which preferred open and dry landscapes. The consumption of small, young, tree plants by cattle created open pastures, a landscape previously not known in southern and middle Germany.¹⁷ Ash trees grow stronger when damaged, in this case by being used as fodder ('Laubfutterbaum'). Pollen analysis shows that cattle were driven into the nearby low mountain range when the woods near settlements in areas of fertile loess were no longer sufficient. This usage left traces. After a few decades the composition of the woods changed. By the end of the Neolithic there were no pure *Tilia* woods left and elm trees had almost entirely disappeared. In fact the cattle had eradicated this tree type.¹⁸ Even other tree species were affected. Kuster states that "economic systems of prehistoric man definitely affected the formation of beech and mixed oak-hornbeam forests".¹⁹ Farming activities and shifting coloni-

15 Luning & Stehli 1989, 116.

16 Luning & Stehli 1989, 113.

17 Matuschik *et al.* 2002, 157.

18 Luning & Stehli 1989, 114.

19 Kuster 1996, 1.

zation at the end of the 5th millennium BC led to the more frequent appearance of beech. Pollen profiles of the Bavarian alpine uplands prove that cereal pollen was accompanied by so-called cultural companions and specific changes in forest composition. These results point to a very early aceramic and even pre-Neolithic agricultural activity.²⁰ Similar results are also known for Kanton Wallis in Switzerland and Lago di Ledro in Italy.²¹

After the transition from a 'natural' to a 'cultural' landscape it was most likely cultivation that provided the most important staple foods: emmer and einkorn wheat, barley and millet. They were supplemented by peas, lentils and oil plants such as flax and poppy. Wild hazelnuts, apples, and different berries such as raspberries and strawberries were also used.²²

When the issue of early farming is discussed one has to keep in mind that this was a novelty. Thus it is very unlikely that the first results of farming and animal husbandry were highly successful as it was a process of trial and error. In my opinion it is important to see the impact that this new lifestyle had on the ecological surroundings because the latter responded to it and in turn affected the living conditions of the people, a point which is often neglected in archaeological research. I consider it very likely that the extension of cultivation space was a disadvantage for the natural plants which represented alternative or additional food sources: when the farm land expanded the plants had less space to grow, and consequently they decreased in number.

From a biological-ecological point of view the sum of all living beings of different species represents a biocoenosis, an ecological community. It is a major habitat type best adapted to the conditions of the living space (biotope) and strongly influenced by abiotic components: light, climate, temperature, air and soil. The biotope and the community with all its interactions form the ecosystem, a highly advanced and elaborate system of intra- and interspecific relations. A major part of this is an ecological mechanism that maintains the structure and services produced by the ecosystem. It provides the 'entire circle of life' cycles that all inhabitants are dependent on: energy exchange, water provision and filtration, photosynthesis essential for the removal of greenhouse gases such as CO₂, production of food, biomass and decomposition, and nutrient cycling (e.g. bacteria, fungus species, and worms are an important part of the process of mineralization of organic substances which keeps the soil fertile, helping the fauna to create new plants and thus new food). In an ideal case the decomposition rate equals the rate of production. "These systems are impressive not only in their capture of energy but also, and more importantly in their net return on investment."²³ If this cycle remains relatively undisturbed it usually provides enough resources for the community members to survive in their biotope. Although this complex system has a remarkable ability to balance errors in a self-regulative way, it is very vulnerable and highly sensitive to disturbances from outside.²⁴ Many of its species are extremely specialized and demand an environment that remains relatively stable and unchanging. The disappearance of a single species, for instance a specific plant sort adapted to low nutrition soil, can be caused by the use of agricultural fertilizers. This can be enough to threaten the existence of specialized animals

20 Scheidl & Kossak 1974, 7–8.

21 Scharl 2004, 61.

22 Luning & Stehli 1989, 114.

23 Tainter *et al.* 2003, 9.

24 Bayrhuber *et al.* 1998, 100.

that need to accumulate food (plant substrate) from exactly this plant species in order to survive. These animals represent the main food source for another group of beings and so forth. Several such extinctions can cause great damage on the whole – it can negatively affect the resources and food production and thus the size and growth rate of the population. The entire ecosystem can be endangered.²⁵ In addition the disturbance of one ecosystem affects the neighbouring ones as they are interlinked via networks of substance interchange (water, natural fertilizers etc.) and energy exchange. During the time period in question, the abiotic components were unstable: the climate changed and the intervention of humans practicing farming and animal husbandry must have significantly disturbed the ecological balance of the local biotopes. This probably created an antibiosis, which means that the new lifestyle was disadvantageous for the other beings in the community and resulted in competition for resources. Changes in the biotic and abiotic factors must have entailed a major strain on the balance of the ecosystem and its inhabitants. It seems quite possible that this led to difficulties for the Neolithic settlers when it came to food procurement: their animals needed the space and the food that previously had been consumed by the wild population, which now had to draw back into other areas not occupied by humans.

An additional factor to be considered is that early agriculture was a procedure with uncertain results. One has to expect many failures both in cultivation and animal husbandry. When these practices were not successful, the need for hunting and gathering increased but at the same time the possibilities for such were minimized. The nature changed through the impact of people; the disturbed ecosystem reacted with changes of its own; over time the possibilities to accumulate food from the nearby nature decreased, and due to sedentism people were probably no longer highly mobile. So the result must have been occasional substantial crises. In short the influence of humans changed the environment, and this had an impact on their subsistence agriculture which in turn affected their forms of spatial and social organization. So, it is a reasonable idea that these circumstances made it necessary to have some sort of backup in order to survive the errors of an immature substantial economy. Thus we can assume that one of the main reasons for several of the established early urban networks and settlements was to create a security system in case of crisis.

Complex settlements in the Merzbach valley

One of the most famous early farming communities in Germany is situated in the Merzbach valley in the Lower Rhine Basin. The Langweiler settlements in the Merzbach valley represent an example of early networking and show a long continuity with regard to the early Neolithic inhabitants. This internationally known settlement site is one of the best and most extensively studied; it covers an unusually large area. As will be discussed below, it demonstrates continuous occupation cycles – a peak, a decline, and reorganization of the community during several centuries. Sedentism in the Lower Rhine Basin first began around 5300 BC (*Fig. 1*). This loess area was very fertile and thus offered rich farm land. Because the loess soil is aggressive towards osseous material, little is found here in terms of human and animal bones. Thus the numbers of both the human

25 Bayrhuber *et al.* 1998, 97.

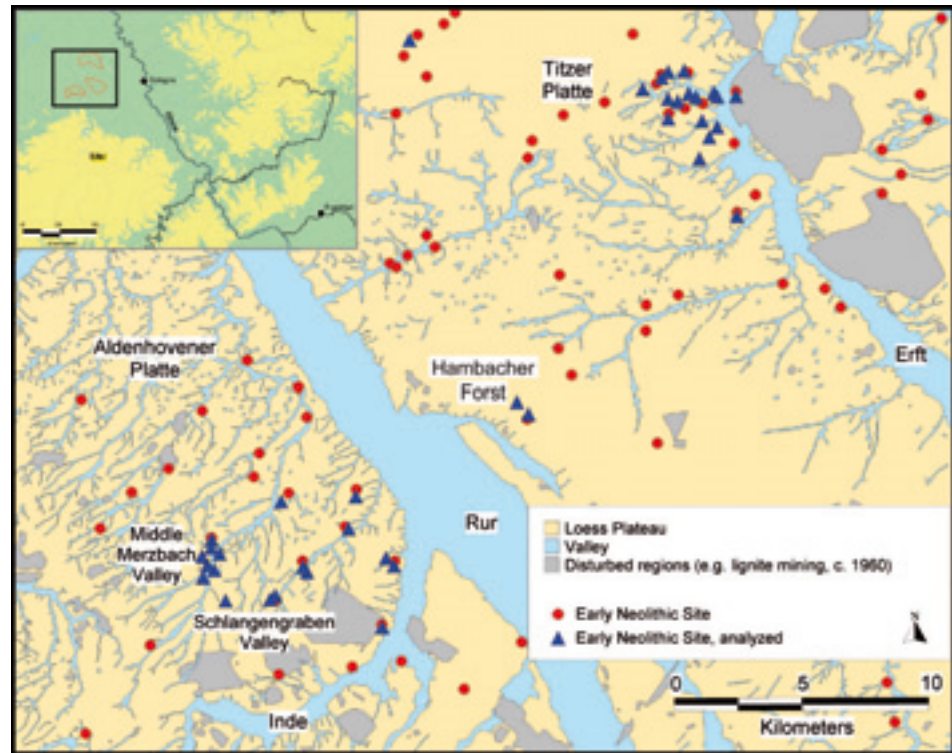


Fig. 1. Map of early Neolithic settlement activity in the lignite mining area in western Germany. Map by Erich Claßen (after Claßen 2007, fig. 1). The map is based on: Bodenkarte von Nordrhein-Westfalen 1:50 000, Blatt L 4904, 1971, Bearbeiter W. Paas. Database for map: E. Claßen and J. Richter 1997, Fundstellenregister. Added data from the project "Landschaftsarchäologie des Neolithikums im Rheinischen Braunkohlenrevier" (A. Zimmerman and Th. Frank, University of Cologne).

population and the livestock are often not based on find material but on theoretical models, pollen diagrams and on evidence from LBK sites in other areas (see discussion below).

The LBK settlements of Langweiler in the Merzbach valley are situated on the fertile Aldenhoven plateau and were occupied for about 400 years. There are 46 sites nearby but owing to gaps in the archaeological record only 19 settlements could be documented. The settlements were orientated northeast and southeast, situated on plateaus or sloping terraces between 59 m NN and 102 m NN. The settlement activities at the site of Köningshoven 12 began in 5350 BC, with four settlements with a maximum of eleven houses in each. The site showed a continuity of over 300 years and had, all in all, about 15 settlements, some of which were contemporaneous while others were established at different times. Some were used for a long time whereas others were abandoned already after one generation. The LBK longhouse is the basic unit and comprises a house with its associated pits.²⁶ It was possible to identify 13 so-called house generations (Hg). This term describes the temporal dimension during which a house and its agricultural surroundings were used. In average, one such house generation in the Rhine area is equivalent to 25 years.²⁷

At first the pioneer settlements consisted of two to four houses located in the southwest research area. The distance between the first settlements was about two to three kilometers. Single farmstead settlements were founded in the vicin-

²⁶ Claßen 2009, 97.

²⁷ Claßen 2006, 2.

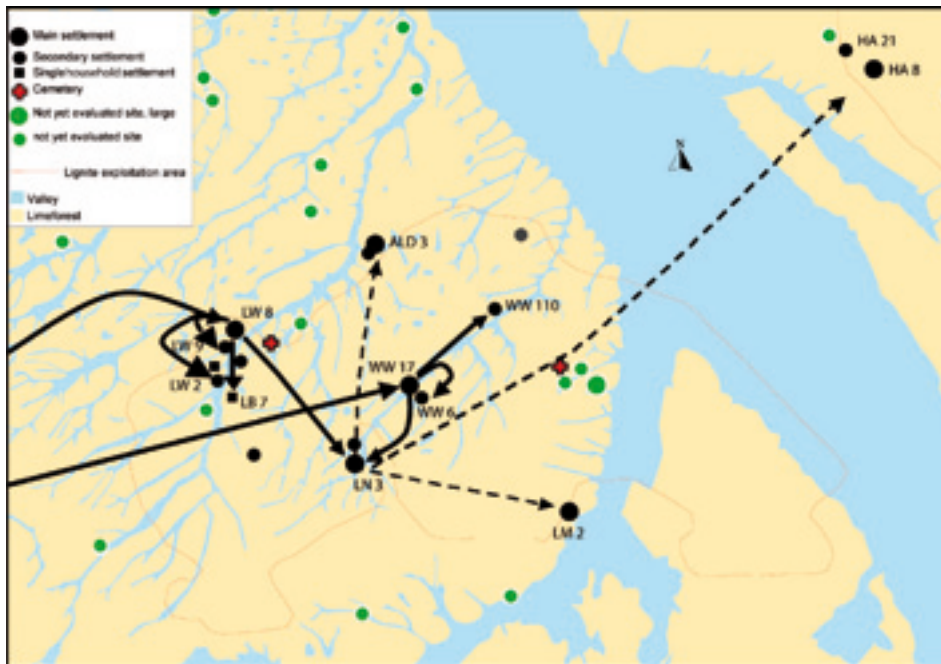


Fig. 2. Simplified diagram showing the exchange of raw flint on the Aldenhovener Platte, Germany. Map by Erich Claßen (after Claßen 2007, fig. 3).

ity, and new pioneer settlements at a greater distance appeared in the northern part of the research area. It is assumed that the distance to the nearest water source was 50 m to 800 m during the Stone Age.²⁸ By c. 5150 BC (Hg VII) some single household settlements had grown and developed into medium-sized hamlets with two or three households at one and the same time. The maximum occupation density is documented for c. 5000 BC, representing house generation XII. There were a significant number of buildings: 29 farms existed in 9 different settlements at the same time. During the younger Bandkeramik culture the number rose to 31 households in 11 settlements. Due to a body of heterogeneous data it is very difficult to trace the former size of the settlements. The estimated dimensions for 12 settlements differ between 0.5 ha and a maximum of 15 ha. The number of cattle assumed for Langweiler during HG 12 is 50 animals for 16 simultaneously existing farms.²⁹ That is equivalent to 3 animals per household and 0.5 heads per cattle per person. This represents an average of six persons per household, which is assumed in this model.

Two to three generations after this period there followed a rapid and drastic decrease in LBK occupation density. In c. 4950 BC settlement activities disappeared, which ultimately led to the end of the LBK settlement in this part of the Rhineland. There are no traces of settlement for the following fifty years.³⁰ The most important economic factor for the people in the Merzbach valley was apparently the manufacture and supply of high-quality flint tools for local use. In a first stage, two main settlements were supplied directly from the flint source near Rijckholt in the Netherlands (Fig. 2). A high production of blanks with cortex is a sure sign of the processing of flint nodules brought into these settlements. This indicates that a great deal of processing took place on the sites. These main settle-

28 Claßen 2006, 1.

29 Ebersbach & Schade, 2005, 269.

30 Claßen 2006, 2; Claßen 2009, 98.

ments passed on cores, blades and final products to their neighbors in their settlement group.³¹ During the three centuries, the LBK in the Merzbach experienced two dips. After the second dip the LBK culture did not recover but changed within a few decades into the Großgartacher culture, an early Neolithic culture dated to c. 4850–4750 BC with visible differences in ceramics, house forms, a changed settlement structure, and a new exchange system for flint. Curiously, the Großgartacher culture founded its settlements in the untouched neighbor valleys and not in the former locations of the LBK settlements.³² The reason for this remains unclear. One could assume that reasons such as territorial behavior or some form of religious taboo might have come into play.

The reasons for the decline of the Merzbach settlements are not entirely clear. Louwe Kooijmans assumes that “extensive stretches of loess were fully exploited, at least during a mature stage of the LBK. The settlements were lying along the valleys between the lower grazing lands and the higher crop field. The continued extension of the LBK into Belgium and on less favourable sands along the Lower Meuse and Rhine [...] and at last into northern France, [...], might be very well the result of a population increase and a resulting population pressure”.³³

A definite factor in the crisis of the Linear Pottery culture was the supply of flint, more specifically ‘Feuerstein’, one of the most important commodities for centuries and sourced from Limburg in the Netherlands. The use of this material decreased and was replaced by flint of lower quality from Rullen, near Maastricht. This situation is underlined by the following concept of resource transitions and energy gains: “The quality of resources and the returns on exploiting them impose organizational constraints that are inescapable.”³⁴ Lüning is convinced that the end of the Linear Pottery culture occurred when the first farmers encountered the limits of growth and were marked by an economical crisis: “Denn das Ende der Bandkeramik scheint durch eine weitreichende ökonomische Krise gekennzeichnet zu sein.”³⁵ Both scholars emphasize an economic crisis as the reason for the decline, although it remains unclear whether the collapsed flint supply or the depleted soil was the main cause. In my opinion both factors might have been relevant simultaneously, especially when considering that farm products may have been exchanged for commodities. In addition, one could cautiously assume that the low-quality flint tools might have caused problems in the cultivation of land which in turn might have led to a smaller number of crops. Coward and Gamble state that “sedentism can only be understood in the context of social networks and small-world societies that supported them”.³⁶

Claßen pursued a social-network analysis of the area and concluded in his dissertation that the central reason for the discontinuity of the LBK settlements in the Rhine area was a breakdown of traditional social networks which caused the end of the first farming cultures in the Rhine areas: “Dem Besiedlungsabbruch in der Bandkeramik des Rheinlandes geht also ein Bruch mit den Beziehungsnetzwerken voraus. Man kann daher schlußfolgern, dass ein Wandel sozialer Strukturen ein entscheidender Faktor für das Ende der frühesten Bauernkultur

31 Claßen 2007, 33.

32 Lüning & Stehli 1989, 119.

33 Louwe Kooijmans 1976, 239.

34 Tainter *et al.* 2003, 11.

35 Lüning & Stehli 1989, 120.

36 Coward & Gamble 2003, 55.

des Rheinlandes war.”³⁷ The changes in settlement patterns reflect a change in the social structure. Social network analysis points to a constant and stable relational pattern for the older middle Bandkeramik, which perhaps was based on relational traditions of pottery production and the distribution of raw material for stone artefact production. One result is a change in the relationships between settlements over time, which is regarded as indicative of a changing social structure. In the earlier phases, kinships seem to have had a greater influence on relationships – the connection to the “founding mothers and founding fathers” must have been considered important for a long time.³⁸ In the middle phase of the LBK very strong ties continued to exist between single settlements on the Aldenhoven plateau, and the subgroup east of the river Rur was upheld for a period of 200 years. However, at the end of the early Neolithic in western Germany the structures changed, and former settlements of central impact became less important. Alliances were formed for other reasons.³⁹ Again the existence of early social networks and the impact of their change show yet another aspect of the early urban mind, depicted here on a regional scale perspective for the Merzbach area.

Early community life on the Orkney Islands

Another very special example of early community life is found in the Orkney Islands, an archipelago 20 miles off the north coast of Scotland across the Pentland Firth. Skara Brae is Europe’s best preserved complete prehistoric village.

It was not more than 10000 years ago that people first came to Orkney. At that time the archipelago comprised a single landmass, and consequently many of the areas settled by the early inhabitants now lie under water (*Plate 1*). Thus, little of the material culture of these highly mobile and nomadic Mesolithic fisher-

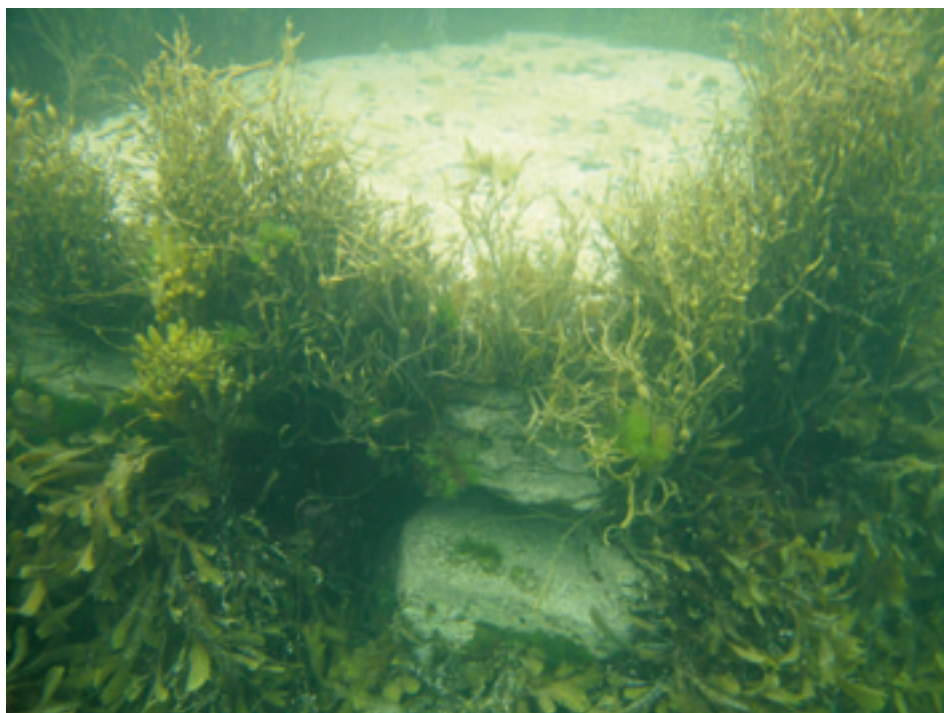


Plate 1. Sunken treasures of prehistory. Large man-made stone structure north of St. Mary’s Chapel, Damsay, Scotland. Photo courtesy of The Rising Tide Project.

37 Claßen 2006, 4.

38 Claßen 2006, 4.

39 Claßen 2008, 1, 5.

Fig. 3. Shoreline around Orkney in the Younger Dryas based on available paleo-shoreline and sea-level data. Map by Richard Bates and Alastair Dawson.



hunter-gatherer cultures, which traveled from one area to another to make the most of the available resources, has survived.

The landscape around the Orkney archipelago at this time, at the end of the last Ice Age, was up to 45 meters lower than today, which is due to a combination of changes in the levels of both sea and land⁴⁰ (*Fig. 3*). This highly complex process continues even today but at a significantly slower rate. As water released from the ice flooded back into the oceans, a rapid rise occurred. In Orkney where the earth's crust was less depressed, many former coastal lands became submerged, and thus the first millennia after the end of the Ice Age represent a time of dynamic environmental changes: the removal of weight from the land mass after the ice had melted led to earthquakes and landslips. The temperature was a few degrees Celsius warmer than today and the climate a bit drier. Thus the land was covered by woodland such as low scrub, birch and hazel as well as some taller trees like pine. In contrast to the knowledge we have of the vegetation, there is little evidence for the fauna of the period, but wild boar and red deer seem to have been present.

The Ice Age landscape of Orkney has so far been insufficiently studied. The research project 'The Rising Tide' involves specialists of Aberdeen University who work in a multidisciplinary team and use archaeological and paleogeograph-

⁴⁰ Wickham-Jones & Dawson 2008, 18–20.



Plate 2. A sediment core – here from Loch Stenness, Seatter Embayment, Scotland – gives valuable information on climate. Photo courtesy of The Rising Tide Project.

ic techniques such as hydrographic survey, examination of cores for sediment analyses (*Plate 2*) and microfossils (diatoms), stratigraphic survey, and radiocarbon dating in order to reconstruct sea-level changes in the past and their effects on the early inhabitants of Orkney.⁴¹ The sea-level history during the Holocene is complex (*Fig. 4*) owing to isostatic uplift of the land after the melting of the last ice sheet that covered the region.⁴² In some parts of Scotland where the ice was thickest, depression of the earth's crust meant that higher relative sea levels produced raised beaches. Two AMS radiometric dates have been obtained from sediment probes: Echna Loch 3950 ± 40 BP (Beta 242126) 2340–2570 cal BC, and Voy Stenness 3090 ± 40 BP (Beta 242127) 1440–1270 cal BC. These dates give an initial idea of the age range when the sea level reached present levels around the mainland of Orkney.⁴³

The Neolithic village of Skara Brae was discovered by chance when a heavy storm hit the island in 1850. It was excavated from this time until 1930, and was first thought to be a Pictish Iron Age settlement⁴⁴ before radiocarbon dating in the 1970s revealed that it was a Stone Age village inhabited between 3200 BC and 2200 BC for at least 600 years.

Owing to the protection of the covering sand the eight circular buildings are extraordinarily well preserved. Some of the wall structures are still standing, alleyways have their original stone slabs, and even the interior fittings of the individual houses are preserved. Each of the windowless buildings has an identical layout: a single room, with a floor area up to 36 square metres, and a central fireplace (*Fig. 5; Plate 3*). The furniture was crafted of stone, a lucky circumstance

41 Dawson & Wickham-Jones 2006, 7.

42 Dawson & Wickham-Jones 2006, 6.

43 Wickham-Jones & Dawson 2008, 19.

44 Childe 1931.

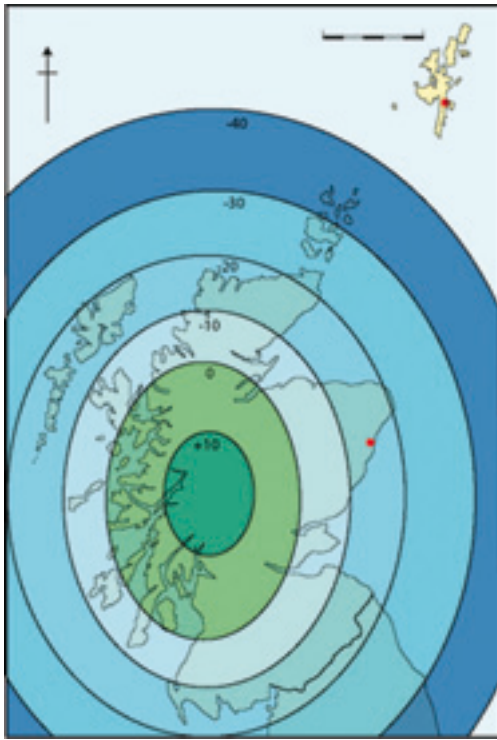


Fig. 4. Shoreline isobase map for early prehistoric Scotland. The areas in blue show where earlier shorelines are submerged; green areas show where raised shorelines can be expected. Map by Sue Dawson.

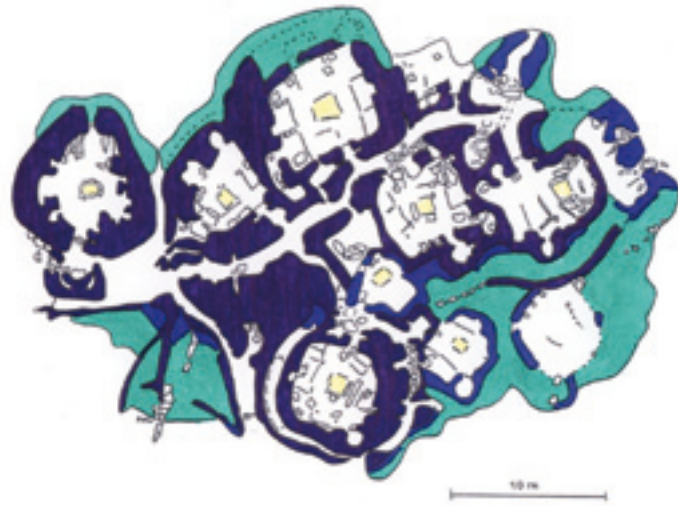


Fig. 5. Floor plan of Skara Brae. Drawing by Julia Mattes.

that led to the fact that the entire interior survived the millennia: large blocks, probably used as seats, cupboards and shelves, a bed on either side, and a shelved dresser on the opposite side of the doorway – perhaps to display objects of status as it was the first piece of furniture one saw when entering (*Plates 4–5*). As usual for archaeological structures, the roofs of the houses are not preserved, but it can be assumed that they were made of organic material like whalebone or driftwood which served as beams and which were covered with skins, turf, thatched straw or seaweed, which is known from houses in Orkney even in recent times. The houses branch out from a central main passage. They are linked together by low passages or ‘tunnels’, just over one metre in height (*Plates 6–7*) and covered with stone slabs. These passages forced everyone to move through the village in a specific way: protected from the elements but seen by everyone. Thus the architecture provided a means of social control.⁴⁵ Bar-holes at the entrance of each house, and one at either side of the passageway’s main entrance, indicate that the entrances could have been sealed, so that visitors entering the village had to kneel or stoop. The same is valid for the chambered cairns which contained the burials. Additionally the village possessed a remarkably sophisticated drainage system which might have included an early form of toilet facility.

Standing on natural sand in contrast to the other houses that were erected on previous structures, ‘house seven’ is probably the oldest building and the one used for the longest time at the site. It differs from the others in a number of ways, which results in a special interpretation: it is ‘separated’ from the neighbouring domiciles and was accessed via a side-passage that exclusively served house seven. The bodies of two women were found under the bed at the right-hand wall, buried in a carved stone cist prior to the construction of the house. The building

⁴⁵ The aspect of social control can also be observed at several Stone Age sites in eastern middle Sweden. They were arranged in a specific way so that every person coming and going was visible from the dwellings. See Björck 2008, 64; Björck *et al.* 2008, 317–354.



Plate 4. Interior of a house in Skara Brae. Photo by Sigurd Towrie.



Plate 5. Stone Age display cupboard. Skara Brae. Photo by Sigurd Towrie.

Plate 6. Inside a Skara Brae house with a view of the door. Photo by Sigurd Towrie.



Plate 7. A passageway in Skara Brae. Photo by Sigurd Towrie.



was designed to be sealed off: the door could only be locked from outside – so whoever was inside had no control over getting out. This fact raises the question whether this house was used to exclude people from society. It might have been a sort of temporary ‘prison’, or perhaps it was a cult house, a building for ritual purposes like a death house, or a place where the recently deceased could ‘lie out’ before being buried. Recent studies suggest that it might have been the kind of structure that hosted rituals explicitly embedded in the cycle of life.⁴⁶

It appears that the village of Skara Brae lasted seven generations and never grew any larger than the eight documented buildings which housed an estimated number of 50 to 100 inhabitants. Life here must have been rather comfortable by Neolithic standards. Finds in the midden showed that the diet of the Skara Brae farmers consisted mainly of meat from cattle and sheep and of wheat grown close by, but also a great quantity of fish, primarily cod, saithe and shellfish. It is thought that shellfish, especially limpets, could have been kept fresh in tanks in the houses. In addition, the inhabitants hunted red deer, wild boar and seal; and of course they could have made use of a beached whale, and they may have collected the eggs of sea birds. The animals not only were a food source but also provided bone and skin, materials for tool making and clothing. There is no evidence for textile production. The inhabitants were farmers and probably quite self-sufficient, but perhaps they maintained contact with other communities by trading, for example, pottery or clay.

The founders of the settlement used their resources in a very smart and effective way. The complex of houses is surrounded by a so-called midden, pre-existing ancient rubbish used to insulate the dwellings against the rough weather and also connecting them, thus having a stabilizing effect. Thus Skara Brae is a very early example of ecological ‘green’ house construction. During the time the village was used it became embedded in its own waste and by sand dunes, and therefore was gradually abandoned. Gordon Childe, who excavated the site, believed the village had been vacated suddenly on account of a catastrophe, rather like a northern Pompeii, but the current interpretation is that the abandonment was a gradual process connected to a change in society. The tight-knit, egalitarian, village community structures were in time replaced by a more hierarchical type of social organization, perhaps based on controlling spirituality. Thus, the families eventually dispersed across the landscape and settled in individual dwellings.

Having survived for more than 5000 years the ancient monuments are now endangered. Today not only the growing number of visitors is causing problems. The Neolithic inhabitants placed their village carefully at a safe distance of more than a mile from the coast, but today it is under constant threat from the elements: storms, sand and spray from the Atlantic, as well as coastal erosion and the rising sea level. The coastline is receding approximately two meters per year in some places, and consideration should be given to the estimate that sea levels could rise by about a meter at the end of the century due to global warming. Thus, there are currently thoughts that the entire complex should be moved stone by stone in order to be saved. On Orkney more than 500 archaeological landmarks have already been washed into the sea, while 57% of the heritage-protected monuments in the southwest of England are in danger of meeting the same fate, and 26% are at high risk in a short-term perspective.⁴⁷

46 Mattes 2008, 282, 306.

47 <http://www.english-heritage.org.uk/upload/pdf/smr-sw-acc-web-final.pdf?1250713526>

The pile dwellings of the circum-Alpine region

Another example of an early way of settling in a community is the pile dwellings of the circum-Alpine area. They begin to appear c. 4300 BC and represent, like no other example before them, a new way of organizing space. It is here that for the first time in Europe a huge cluster of early villages appears. The spatial organization of each village shows a remarkably innovative way of arranging social space and thus mirrors many facets of the early urban mind of its inhabitants.

The so-called Pfahlbaukreis follows the lakes of eastern France, Switzerland, southern Germany, Austria, Slovenia, and northern Italy from Lake Como and Lake Garda down to the Po delta. So far about 500 settlements have been discovered, and an estimated total of 1000 are believed to have existed. No other region in Europe shows such a massive concentration of prehistoric settlements.

The discovery of these lakeside dwellings began already in 1854 when a prehistoric settlement was found near Obermeilen at Lake Zürich.⁴⁸ These dwellings have been a popular topic of research ever since. A complex of different sciences and analyses has helped to increase the knowledge of these early settlers, including geological data on bogs, botanical and zoological analyses, and marine archaeology. The earliest lakeside settlements are connected to the Egozwiler culture which inhabited central Switzerland around 4400–4200 BC, followed by the Aichbühler group in Upper Swabia dated to around 4200 BC.⁴⁹

Like Skara Brae in Orkney, these settlements were perfectly suited to the climatic conditions of their environment. Situated in bogs, the houses were adapted to different needs than those of the dwellings next to the border of the great Alp lakes. The latter were exposed to episodic flooding and annual fluctuations in the water level. Results of dendrochronological probes prove that the water levels of the lakes varied, especially in eastern France and western Switzerland. Dendrochronological and climatological data demonstrate climate change during this same period. The Piora Oscillation occurred with its abrupt cold and wet period in the climate history of the Holocene epoch. During the cold phase of Piora II, in c. 3700 BC, the crop yield must have been affected in a negative way.⁵⁰

In addition the finds of animal bones show great variation during this time span: the great amount of bones from domestic animals decreases and the amount of bones from wild animals rises significantly.⁵¹ This strongly suggests that the breeding of domestic livestock declined and that hunting was done to secure the living conditions. These substantial crises are discussed as being the direct results of climate changes, in this case those occurring during the 29th and 28th centuries BC.⁵²

The methods of constructing the individual pile houses as well as the floor plans are diverse. The houses appear to have been one-aisled, two-aisled or three-aisled. Their size varies significantly, from small houses of about 6 square meters to huge houses of 75 square meters. Architectural elements show that the 'swimming' pile dwellings are diverse in construction and very elaborate. Some of them had so called 'pile shoes' to even out the pressure of the roof and stabilize the construction on the ground.

48 Keller 1854.

49 Wyss 1994, 1996; see also Strobel 2000.

50 Brombacher & Marti-Grändel 1999, 15.

51 Schibler 2008, 328–383, 389.

52 Schibler *et al.* 1997, 335.

Like the longhouses mentioned earlier, the predominant function of the pile dwellings was to provide living space for the Neolithic people. Dendrochronological dates show that the houses were renovated or newly erected in rather short intervals of 4–20 years. Most of the settlements existed for only a few years, then were abandoned and erected again in a different place.⁵³ If one considers the amount of work that it takes to erect a village, drastic reasons including a quite significant crisis must have come into play. Again, the impact of climate change can be an explanation for these gaps in the frequency of settlement activities.

Finds of cereals and different equipment show that the houses also served as storage places. Surveys and distribution maps as well as rubbish and zoological remains give good information on the organization of the sites and the use of the individual buildings.⁵⁴ Some buildings contained traces of small domestic stock, while the houses situated in bog areas sometimes showed that both people and livestock shared the living space.⁵⁵

The inhabitants of these lakeside settlements started with a mixed ecology community based on crop production, animal breeding, pastoralism, fishing, hunting and gathering, as well as forest clearance.

Owing to the fact that these ancient settlers did not thoroughly wash their vessels and dishes before use, there are organic residues that tell us about their diet and thus about their subsistence strategies. Potsherds from the sites of Arbon Bleiche 3 in Switzerland and Hornstaad-Hörnle I A in Germany contain cereals, plant tissues, and fishbones, indicating that they were used for food storage and for cooking.⁵⁶ Molecular and isotopic residues on pottery at these sites give evidence of meat consumption (fat residues from calf/lamb adipose), and a study of the $\delta^{13}\text{C}$ values points to dairy farming (cooking of cow, goat and sheep milk) among the pile dwellers during the late Neolithic.⁵⁷

The settlement patterns are as varied as the individual house constructions. The houses of the Egolzwiler culture and the Cortaillod culture, dated to c. 4300–3400 BC, appear in single rows and sometimes even in a sequence of rows with their gables pointing to the shore. The early settlements of the Aichbühler and Schussenrieder cultures of upper Swabia, as well as those of the Hornstaad group on Lake Constance, show a very similar but less strict arrangement during c. 4200–2900 BC.

Around 3850 BC, houses of the Pfyn culture at Lake Constance and Lake Zürich were positioned with their long sides to the shoreline. This custom was taken over by the Horgener culture at Lake Biel in about 3200 BC. In the second half of the 4th millennium BC different settlement structures appear. The houses are now arranged along two sides of a central village road, with their gable sides facing this central passage. Such ribbon development is documented at Lake Constance, Lake Biel and Lac de Chalain. The row of houses of the Saône-Rhône culture and the Corded Ware culture are either positioned parallel to the shore or facing the lake.

The size varies. There are hamlets with only two or three houses, and there are settlements consisting of 100 houses at one and the same time. During the Neolithic the settlement density was high. Settlements around the lakes had a

53 Hartz *et al.* 2002, 152.

54 Brombacher & Marti-Gründel 1999, 13.

55 Tardieu 2002, 313–330.

56 Spangenberg *et al.* 2008, 190.

57 Spangenberg *et al.* 2008, 196–198.

distance of 2–3 km to the next neighbour village, and at the end of the Neolithic this distance was even shorter.⁵⁸

Characteristic for these early settlements are the short-term occupation of houses and the strong settlement dynamics. The settlements usually lasted 40–45 years, in rare cases 40–80 years. Often a settlement displacement can be observed. During the end of the Neolithic the settlements show a more stable structure: buildings are kept in the same place and are repaired for quite a long time span: 60–120 years.⁵⁹

Another characteristic is the custom of building densely, that is, the houses are squeezed into a small space. The villages are often enclosed by fences or palisades. Excavations at Concise by Lake Neuenburg prove that constructed wooden trackways leading to the settlements gain more and more in importance around 3700 BC.⁶⁰ This corresponds with the first finds of wheels at the end of the 4th millennium BC. Another great invention of the Stone Age is in fact wheeled transport. The earliest finds of wagons in Germany occur at the same time as the oldest depictions of wagons in the Middle East. Wooden roads, wheels and traces of sleighs are documented for the middle of the fourth millennium BC. Around 3400 BC double burials of cattle occur in Germany, which indicates that people valued and appreciated these draught animals.⁶¹

Here again many aspects of the urban mind are visible: People invented new technologies and adjusted their spatial organization to their new technical inventions by creating new forms of architecture and interlinking them with the infrastructure to match the invention of ox-drawn vehicles. It is very likely that the new transport and communication facilities led to an increase in social activity and thus to a different identity and the need for physical and symbolic boundaries to separate the individual communities. The latter are visible in the appearance of enclosed villages.

Neolithic religions: Scandinavian examples

An important part of the cognitive sphere is, of course, religion. The neurological basis of religiosity or being capable of ‘thinking in a religious way’ is thus the development of belief: “The tool for this fundamental operation is the capacity for imagination. It is while searching for neurological evidence for the development of this capacity and of its social implications that we, in passing, will account for religious-like phenomena.”⁶² Religion is “recognized as one of the most powerful forces operating on individuals and societies, one which can stimulate them to acts of great enterprise or great cruelty.”⁶³ So, an expression of the urban mind can be found in the remains of cultic rituals. The first certain cultic arrangements in central Europe date to the middle of the Neolithic, c. 4000 BC.⁶⁴ The Scandinavian examples are usually quite different in context and construction. The following two examples of exceptional sites from eastern middle Sweden show

58 Schlichterle 2005, 65.

59 Schlichterle 2005, 65.

60 Hafner 2002, 139–142.

61 Matuschik *et al.* 2002, 157.

62 Bloch 2003, 195.

63 Scarre 1996, 590.

64 Lüning 1989, 11–12.

astonishing remains of early cult practice. Both sites have cult houses containing human and animal bones, which were purposely divided up and put in several areas of the houses.

The sites are both dated to the Middle Neolithic B, that is, the middle of the 3rd millennium BC. Bollbacken, Tortuna Parish, Västmanland, is a settlement of the Pitted Ware culture. The stone material consists mainly of knapped quartz and a small amount of flint knapped from axes rather than cores.⁶⁵ Five or possibly six house structures could be identified. One house was different from the others: it consisted of a trapezoid ditch, or wall-trench, without any traces of posts marking the walls, and was orientated NW-SE. Inside this house were burnt human bones and animal bones. Several ¹⁴C-values date this structure to c. 2600–2500 BC. The floor layer contained a pit with fire-cracked stones, pottery, flint and knapped quartz, and cremated human bones which were deposited along the wall of the house construction and, together with animal bones, spread out over the floor layer. The house was surrounded by a semicircular row of nine postholes, one containing cremated human bones, another containing 2.5 kg of cremated bones, most of which were human. A minimum of four individuals and a small dog could be identified by osteological analyses. Close by, a pit with a human cranial bone was found. Another nearby pit contained fire-cracked stones, Pitted Ware sherds, and very fragmented burnt bones of animals and humans, both adult and child bones. The interpretation of this extraordinary ritual structure is debated. It could have been a mortuary house, where people of the Pitted Ware culture were buried,⁶⁶ or a cult house where the remains of humans and animals had served ritual purposes before deposition.⁶⁷ The latter option is supported by the fact that both the artefacts and the bones inside the house show explicit signs of having been deposited,⁶⁸ that they differ from the usual burial custom of the Pitted Ware culture, and that the bones had been defleshed before being buried.

The second example is a house in Turinge, Turinge Parish, Södermanland. It belongs to the Battle Axe culture and is similar to the one from Bollbacken but has an even more extraordinary content. The complex is dated to the Middle Neolithic A as it is situated 30 m above sea level. Radiocarbon-dated charcoal suggests a time span between 2500 and 2200 BC.⁶⁹ The cult house was orientated NNE-SSW and outlined by a ditch, or wall-trench, up to 0.5 m deep, encircling an area approximately 4.8 x 3.10 m. The remains suggest a plank-built house; and postholes, some of which were stone-lined, were also found. About twenty pits of various sizes were dug into the ditch. They were filled with large amounts of fragmented pottery, mainly sherds from 'group J beakers' with two exceptions: In pit 18, three intact Battle Axe beakers were deposited. An additional Battle Axe beaker was found in pit 5. Originally there might have been 16–20 vessels. Furthermore, a fragmented ground stone chisel, a flint scraper, flakes and tools of flint, five battle axes – all of them facing south – and 3.2 kg of human bones and 0.42 kg of animal bones were found in several pits inside the house wall. The curious thing is that the bones of originally eight humans were separated into different body parts and spread out in various pits. The cranial bones were put

65 Larsson 2009, 282.

66 Larsson 2009, 286.

67 Mattes 2008, 192–193.

68 Artursson 1996, 130.

69 Larsson 2009, 288.

in two pits. The skull parts were mainly put in the northern and eastern parts of the wall-trench of the house, while the remains of the lower body parts, such as long bones from the limbs, were positioned in the southern part.

These two examples of houses with such rituals are unique and have no parallels. The conscious separation of parts of the human bodies is another illustration of prehistoric cognition. If these rituals are traces of cannibalism or a very unusual burial custom⁷⁰ or a cultic offering of some sort⁷¹ is hard to tell. As the rituals are expressions of a specific cultural habit, Larsson talks about “encultured bodies and embodied rituals and breaking and making bodies”⁷² and considers them an expression of cultural identity. Activities in connection with rituals, including the erection of a building and especially a roofed one, involve a great effort. Thus it is no coincidence that the construction of buildings of symbolic value, such as a cult house, manifests and strengthens the identity of the individual community.

Concluding remarks

The archaeological remains in the areas that constitute Europe of today show that the development of the urban mind differed in many ways from the process in Africa and the Fertile Crescent. In terms of size and elaboration, the European examples of early settlement and trade activities are not comparable to the advanced towns of the Near East. Nevertheless they prove that the mode of ‘thinking urban’ had begun, even if the archaeological remains show that the actual expressions of this were on a rather small scale. Regardless, people had to face identical problems, and overall they arrived at the same solutions but with individual and regionally varied characteristics which are mirrored in the material culture.

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70 Lindström 2006, 84–86.

71 Mattes 2008, 189.

72 Larsson 2009, 367, 393.

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4. Cities and Urban Landscapes in the Ancient Near East and Egypt with Special Focus on the City of Babylon

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ABSTRACT

The authors give a brief overview of socio-environmental interactions underpinning urbanism in the part of the world with the longest urban development, that is, the Ancient

¹ Olof Pedersén wrote the first version of the Ancient Near East and edited the final version of the chapter. Paul Sinclair wrote a first version of the section about Egypt and suggested details and provided improvements for the whole chapter. Irmgard Hein rewrote the section about Egypt, and Jakob Andersson wrote sections about the Near East and suggested improvements for the chapter.

Near East and Egypt 5000–100 BC. Further details are presented for southern Mesopotamia, with a special focus on the city of Babylon during the reign of Nebuchadnezzar II in the 6th century BC.

Introduction

The earliest towns and cities in the world are found in the Middle East, and therefore this is the area providing the longest historical perspectives on different aspects of urban development and the relation between nature and urban settlement. In this chapter we call the modern area the Middle East, and the ancient cultures as accepted in modern research will be treated as the Ancient Near East. We use commonly accepted definitions of towns and cities in the ancient Near East as elaborated below in the section “Cities in the Ancient Near East”.

We will look at the origin, location, size, form, and abandonment of urban structures, and their trajectories. We will consider the inhabitants of towns and cities, their organization, ideas and languages, their relation to the immediate surroundings and to other urban entities. We will also discuss in what ways the environment and climate could have influenced towns and cities, in particular their location, size, form, and abandonment. The reverse will also be considered, namely the possible influences that ancient urban structures and urban landscapes had on the environment, for example, salinization, vegetation reduction, and problematic water management. We will look at the interaction of towns and cities with the surrounding landscapes and with areas and cities farther away. We will also make an attempt concerning longer-term conclusions on the cycles of development and decline of urban complexes on local and sub-regional scales.

In addition, we will try to move towards an understanding of the cognitive and ideological aspects of the societies reflected in the special form of towns and cities. However, a deeper understanding of the principles of the “urban mind”, governing or influencing the spatial organization of towns and cities, is a much larger question and beyond the scope of this programmatic phase of the project.

Archaeological excavations have been carried out for more than 100 years in a large number of cities and towns in the Middle East and Egypt, and they have given a great deal of material evidence for urban life. During the excavations on Ancient Near Eastern sites, several hundred thousand ancient texts written on clay tablets with cuneiform script have been unearthed, and in the Nile valley large quantities of Egyptian inscriptional material on papyrus and other materials have been recovered. The analysis of this enormous amount of information has often been rather slow. In later decades, environmental factors studied from the viewpoint of natural sciences have supplied further important means for analysing the Ancient Near Eastern cities and urban landscapes. We will try here to lay out a preliminary integrated approach to these materials.

A paradoxical situation in research is that, despite the great amount of archaeological work done, there are difficulties obtaining detailed information on sites and their surroundings. This is in part owing to the difficulty of investigating deep tell sites, which results in much more information about the upper levels and much less about the deeper ones. Above all, many sites have never been examined, so the material we have access to is just a selection (hopefully a representative one) of what existed in ancient times.

The materials and the methods used for this preliminary overview of the development of cities in a core area of human history are multifarious and point to the need for a large number of additional and more detailed examinations. The methods and tools used here involve a combination of modern geographical information systems (GIS) using Google Earth, environmental information, agricultural information, summaries of archaeological surveys, and architectural computer programs for city reconstruction. These approaches are combined with more traditional humanistic information from archaeological excavations and studies of a large number of ancient documents, some newly available, and comparisons with other traditions. We will touch upon problems of relating the empirical archaeological and historical data and societal organization, especially state systems and empires, but details must form another project. A preliminary synthesis will be discussed in relation to current views of resilience and systems ecology theory.

Urban developments in the Middle East will be studied from three analytical perspectives. General questions will be discussed in a large perspective for the Ancient Near East and Egypt. Southern Mesopotamia will be used to provide a somewhat more detailed overview of urban life. Finally, the city of Babylon, especially during the reign of Nebuchadnezzar II, will serve as an example of possibilities for future research in the field.

In this preliminary survey, it has only been possible to treat a few selected main points. Much more should be done in a continuation of the project. Obvious areas little treated here are the Levant, Iran, and Turkey. Even more intensively discussed areas like southern Mesopotamia or even Babylon cannot be exemplified with proper detail, pending more intensive research.

Broad perspectives: the Ancient Near East and Egypt

Even before urbanisation, the Ancient Near East was the main centre for early agricultural development and domestication. The earliest Neolithic agricultural villages dating from c. 10000 BC, with an estimated size of one hectare or less, were as a rule situated in numerous fertile fan areas just a few square kilometres in extent along rivers in the borderland between mountains and plains, giving production potential and communication advantages.² Exceptionally large and well-known examples of such early settlements are Jericho (2.5 ha, c. 9000 BC) and Çatalhöyük (13 ha, c. 7000 BC), described in the previous chapter.

Early urbanism was a gradual process that occurred over several centuries in the early urban centres of southern Mesopotamia but also in northern Mesopotamia and Egypt. The earliest known settlements on the large south Mesopotamian floodplain of the Euphrates and the Tigris – an area extending more than 60000 square kilometres – are from as late as c. 5000 BC. The relatively late appearance of settlements there may be explained by the possible covering of earlier small settlements by alluvial deposits, or that the extensive floodplain posed challenges, which required a larger-scale society as discussed below.

2 E.g. Sherratt 1980.

By about 4000 BC during the so-called Uruk period there was a marked increase in the number and size of towns, and the first cities like Uruk began to appear. There was now a more developed societal organization, in order to manage the extensive irrigation work and the construction of cities. A network of communication ensured the procurement of raw materials as well as certain finished products. The physical control of the irrigation works and the organization of the large population in the towns and cities also required that the administration had the ability to develop writing and other bureaucratic procedures, providing a basis for future cultural and scientific development. The advent of writing, around 3200 BC, marks the start of the historical period which adds a new dimension to our understanding, not only thanks to the physical evidence but also to the written historical documentation about contemporary society. We will illustrate the following 3000 years with selected details (*Table 1*).

Year	Period Mesopotamia	Cities and Towns Mesopotamia			Period Egypt
2000 AD					
1000		Baghdad			
1	Hellenistic Neo-Babylonian	Babylon Nineveh			Late Period
1000 BC	Middle Babylonian	Nippur	Hattusha Qatna Kanesh	Amarna Avaris Kahun	New Kingdom
2000	Old Babylonian Ur III Old Akkadian	Tell Leilan Ur	Ebla		Middle Kingdom
3000	Early Dynastic	Uruk		Hierakonpolis Merimde	Old Kingdom
4000	Uruk				Early Dynastic
					Predynastic
5000	Ubaid				

Table 1. Chronology of the Ancient Near East and Egypt with main periods and cities referred to in the text.

There has been a great lack of good computerised working tools for the geography of the Ancient Near East. Recently, Google Earth has made satellite photos freely available. Depending on the area, the photos may vary from quite good high resolution to medium resolution; fortunately, the parts of the area that were only available with lower, less useful resolution have now been upgraded. However, the localisation of even the most well-known Ancient Near Eastern sites has often been a problem. Therefore, a first step was to provide a system of place-marks for Ancient Near Eastern archaeological sites for Google Earth. Some 2000 sites have been marked so far, and they currently provide the largest such open access collection anywhere in the world. Although still in a very preliminary form, the collection gives a general idea of the distribution of, and insights into, a number of sites (*Fig. 1*).³

3 Available as an ANE.kmz file at <http://www.anst.uu.se/olofpede/Links.htm> for free download and with instructions for use with Google Earth. Support for this project has come from Urban Mind, Uppsala University, and the Excellence Cluster Topoi at Freie Universität Berlin. It has been possible to use library resources at Institut für Alterorientalistik

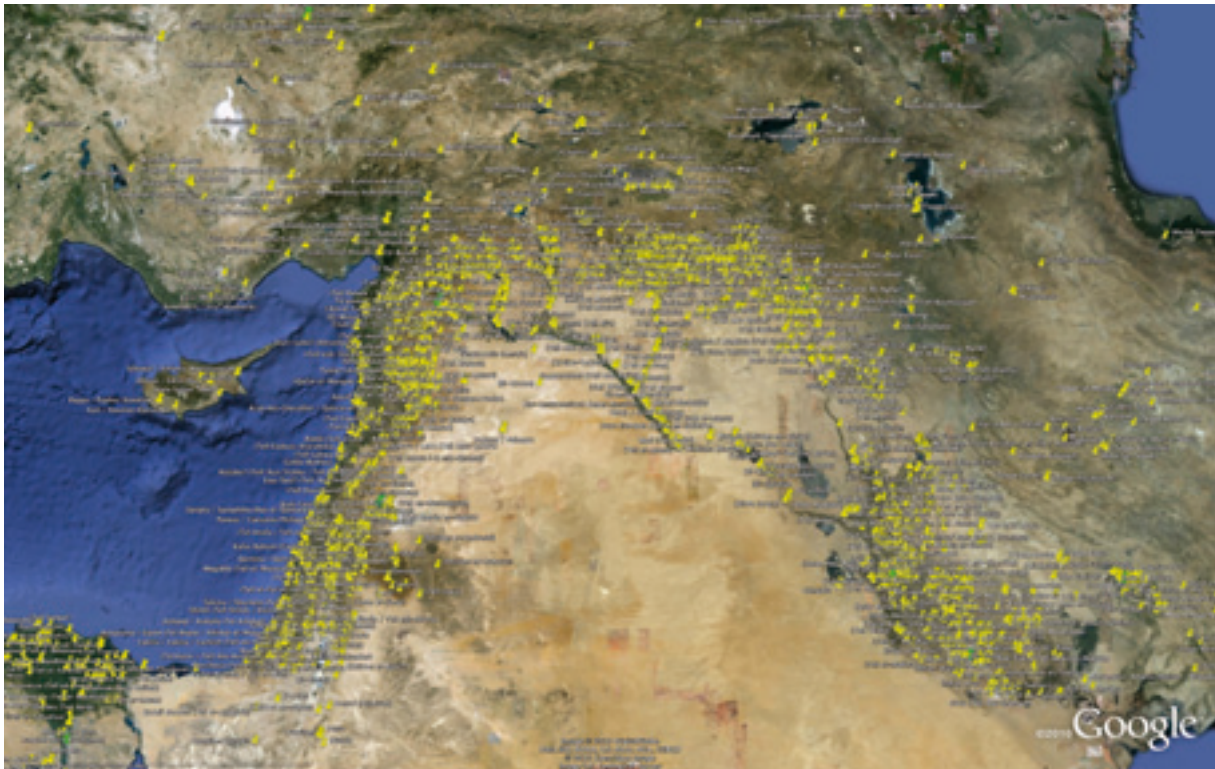


Fig. 1. Preliminary, downloadable placemarks from ANE.kmz showing some 2000 Ancient Near Eastern towns and cities on Google Earth. Scalable in Google Earth where all names are easy to read. Download at www.anst.uu.se/olofpede/Links.htm. Picture by O. Pedersen using Google Earth Pro.

One of the problems has been the many different coordinate systems and datums used when mapping the Middle East. Simply to use available coordinates for locations of Ancient Near Eastern sites often does not work even when using standard transformation algorithms in GIS-programs. The basic values are often not published according to an identifiable unified system.⁴ The only secure method to identify the sites on Google Earth turned out to be an optical search for the right formations in the satellite photos and the use of available coordinates only for reaching approximate areas. This method resulted in a large number of sites correctly placed with correct coordinates. However, much more work has to be done in order to get all the less well-known sites correctly located.⁵ For the future, the preliminary tool ANE.kmz has the potential of becoming much more advanced, for example with division of the sites on the basis of chronology and size.

at Freie Universität Berlin, Deutsches Archäologisches Institut Berlin, and Staatsbibliothek Berlin. Much detailed work is still pending.

4 This applies to detailed work even concerning the ambitious Tübinger Atlas des Vorderen Orients with a number of maps in large format including an index (Register zu den Karten/General Index Vol. 1–3, 1994) as well as two series of studies Reihe A (Naturwissenschaften) 1977–, and Reihe B (Geisteswissenschaften) 1972–.

5 Detailed excavation surveys and plans of excavations, some aerial photos, as well as detailed French, British, Russian, and Arabic maps have been used when preparing the preliminary ANE.kmz. Much detailed work has still to be done.



Fig. 2. Simple map of precipitation in the Middle East. North of the green line, there is more than the 200–250 mm/year required for rain-fed agriculture. South of the line, e.g. in southern Mesopotamia, agriculture is only possible with irrigation. Picture by O. Pedersén using Google Earth Pro.

Environmental conditions in the Ancient Near East

Karin Holmgren and Martin Finné of Stockholm University have provided a short overview of the climate proxy data of the Ancient Near East with data mostly from regions outside the core area of Mesopotamia. Here, a first attempt will be made to integrate the climate information with historical and archaeological material to arrive at the three perspectives of investigation chosen for this study.

The basic prerequisites for agriculture as support for cities are adequate precipitation and suitable soil quality. The Middle East can be roughly divided into a northern, western, and eastern peripheral zone, which allows rain-fed agriculture, and another southern, central zone where agriculture is only possible with irrigation. A minimum of 200–250 mm secure rainfall per year has often been taken as a rough border between the zones. Depending on seasonal fluctuations and possible climate changes, there may be additional variations. In southern Mesopotamia and similar areas, agriculture is dependent on complete irrigation of the entire landscape. In other parts of the Middle East with more precipitation, rain-fed agriculture is possible, but even here sometimes better harvests can be achieved with some sort of limited irrigation (*Fig. 2*).

Owing to the dependence of Mesopotamia on the water of the Euphrates and the Tigris, the climate data from the sources of these rivers may be especially important and are therefore discussed in greater detail below. The main climatic material with such a geographic distribution is from Lake Van, where after a long wet period c. 4200–2100 BC there was a shift towards a more continental climate with a period of diminishing precipitation that lasted for several centuries,

followed by a long dry period c. 1400–100 BC, after which essentially modern conditions prevailed.⁶

Traditionally, the climate of the Ancient Near East has been treated as essentially stable with some variations. However, with increasing availability of better quality proxy data, there have started to appear studies that try to differentiate some critical periods, for example the centuries after c. 6200, 3200, 2200, and 1200 BC. The most discussed is 2200 BC; the latest, 1200 BC, has been dismissed as based on outdated proxy data.⁷ Limiting factors in comparing data from different approaches are the continually better but still too imprecise dates and a limited understanding of how to interpret the proxy data.

Some extreme climatic situations are described in the Ancient Near Eastern literature. Well known is the great flood in the Mesopotamian Atrahasis and Gilgamesh epics and in the biblical book of Genesis. Copies and excerpts of the Mesopotamian epics have been found in the entire region all the way to the Mediterranean. So far all modern attempts to relate such narratives to events in the physical world have been less than convincing.

Landscapes in the Ancient Near East

From the middle of the 19th century on, the study of the Ancient Near East has been based on an unusually good source situation with a combination of huge numbers of contemporary cuneiform texts and large quantities of archaeological finds. The focus has of course shifted over time. From the beginning, interest was mainly directed towards the many thousands of cuneiform clay tablets with detailed textual information about economic, historical, cultural and religious life. Studies were also focussed upon large archaeological sites, often concentrating on their monumental temples and palaces. The very abundant small sites have not been studied to the same extent as several of the larger ones.⁸

In the mid-20th century, large-scale archaeological surveys in southern Mesopotamia placed the individual sites in relation to networks of canals and settlements.⁹ In the following decades there was a tendency to make the surveys more detailed with new and better methods, and as a result there were major changes to the reconstructions, and the surveys were expanded to include other selected areas of the Middle East. There was also a tendency to recognize what can be called archaeological landscapes of the Middle East as regions with different types of landscape, described by Wilkinson as landscapes of irrigation, flat tell landscape, reluctant (sic) desert, and highlands.¹⁰

In the landscape of the Ancient Near East, fields and gardens as well as areas for pasture surrounded the cities and towns, which were often built along rivers or canals. Streets linked the settlements.¹¹ As will be discussed in more detail below, the fields and gardens were used as food supply for cities and towns in

6 Wick *et al.* 2003.

7 Weiss *et al.* 1993; Jas 2000; Staubwasser and Weiss 2006. According to the climatological material presented above by Holmblad and Finné, there are no events around 1200 BC as assumed for the Van material by Neumann and Parpola 1995; this has already been pointed out by Wilkinson 1995, 151, due to a re-dating by 1700 years.

8 Postgate 1994; Zettler 2003.

9 Jacobsen 1960; Adams 1965, 1981; Adams and Nissen 1972; Gibson 1972.

10 Wilkinson 2003; Adams 2008.

11 Frankfort 1950.

addition to produce coming from nearby settlements. For larger cities, the immediate surroundings may not have been sufficient to provide for the population in the city.

Whereas southern Mesopotamia, which is treated in the following section, is totally dependent on irrigation, the landscapes in the northern, western, and eastern parts of the Ancient Near East normally get enough rain to sustain agriculture as a basis for cities. However, attempts to distribute additional water for agriculture also occur in these areas. This is especially known from the periods and areas with the greatest cities, as the following example will show.

In his recent study of Assyrian irrigation in northern Mesopotamia, A. Bagg¹² assumed that the climate was essentially stable. This is an area where agriculture without irrigation is possible. However, during the period 1400–600 BC, there were canals supplying water to the capitals Nineveh, Kalhu (Nimrud), and Dur-Sharrukin. The water was destined especially for the gardens around the cities but was also used to increase the reserves of the fields nearby. Kalhu had a canal system partly in tunnels. There were four canal systems bringing water to Nineveh. Sennacherib's aqueduct is a famous part of the water system from the mountains to Nineveh. The water for these canals did not come from the nearby Tigris but from tributaries from the mountains in the north and the east. This is often explained as due to the rapid flow of the Tigris. An alternative explanation worth examining in more detail could be that the extended drier periods noted above for the Van area during these centuries also increased the need for irrigation. If so, there may have been an adjustment of the water resources due to increased needs and at the same time less water in the rivers, a matter that demands further attention.

Cities in the Ancient Near East

Towns and cities have a central place in Ancient Near Eastern cultures. Cities are larger and have a more complex organization than towns. The ancient cities in the area can be counted in the hundreds, towns in the thousands, and if anyone would like to include the smaller settlements there would be several tens of thousands that are known in one way or another.

There are some common characteristics for Ancient Near Eastern cities and towns in addition to settlement size and the obvious concentration of population. A wall surrounded many of the towns and cities in the Ancient Near East. Sometimes even a section of a city had its own wall. Because the city walls can sometimes be seen with very little excavation, the size of a city is often (as below) given as the approximate area inside the walls. In many cases this may be far too small, as it has frequently been shown that large suburbs surrounded the walled cities. However, owing to a lack of proper studies it is often not possible to give other figures.¹³

Other characteristics of cities and towns are that they had monumental architecture in their central parts. Temples are typical components, and palaces and

¹² Bagg 2000.

¹³ Postgate 1994. For a simple definition of settlement sizes, cf. Adams and Nissen 1972, 18, village 0.1–6.0 ha, town 6.1–25 ha, urban centre more than 50 ha, and city 400 ha. Algaze 2008 has a modified division: hamlets approx. 0.1–2.5 ha, villages 2.6–5 ha, small towns 5.2–9 ha, large towns 10–14 ha, small cities (corrected here from obvious misprint) 24–25 ha, cities 40–50 ha, and primate cities 100 ha.

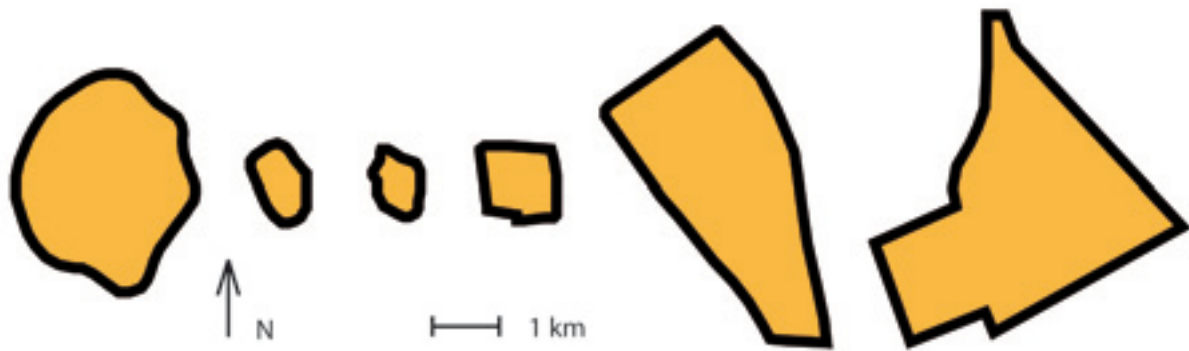


Fig. 3. Form and relative size of some of the largest Ancient Near Eastern cities. From left to right arranged chronologically according to period with largest extent of the cities from c. 2700–600 BC: Uruk (550 ha), Ur (70 ha), Ebla (50 ha), Qatna (100 ha), Nineveh (700 ha), Babylon (800 ha). Picture by O. Pedersén.

other administrative buildings can often be found.¹⁴ There was a social stratigraphy and hierarchy in such large settlements. City rulers led the early independent Sumerian city-states, while mayors were responsible for cities in the later, often more populous, Assyrian and Babylonian states. There was also a political and religious elite interested in prestige goods. Many citizens were free men (*awīlum*), but there was also a dependent group as well as slaves.

In order to keep the society functioning, there was a need for administration, which often led to bureaucracy. This can be seen, for example, in the use of seals, which is sometimes indicative of access to goods at various levels of the bureaucratic hierarchy.¹⁵ With writing, we get documentation centres in the form of archives and libraries, facilitating contemporary life and giving us an historical perspective on human activity not available in societies without writing.¹⁶

In the ancient Mesopotamian languages, both towns and cities were denoted by the same word, Sumerian *uru* or Akkadian *ālum*, whereas villages and small agricultural hamlets could be described with other expressions. Of course, there was a varying degree of complexity and a wide range of sizes among the small towns as well as the large cities. During several periods some of the largest cities enjoyed special privileges.¹⁷

From prehistoric times on, one can point to the existence of trading networks linking the Ancient Near East to the surrounding regions. From the mountainous regions different types of stone, metal, and timber were exported to the Mesopotamian floodplain. Mesopotamia, lacking most raw materials, in turn mainly exported cereals, unrefined wool, and textiles, and also served as a node for imported materials and products made thereof.¹⁸ The agents were individual merchants, sometimes organized in family firms, which were common in the Old Assyrian trading system and well documented from Kanesh in Anatolia c. 1900 BC.¹⁹ Sometimes they represented large financial institutions like the state

14 Frankfort 1950

15 Hallo & Winter 2001; Gibson and Biggs 1977.

16 Nissen, Damerow and Englund 1990; Pedersén 1998.

17 Van de Mieroop 1997.

18 Postgate 1994: 206–222, Crawford 1973, 1992.

19 Veenhof 2008.

or large religious institutions.²⁰ Towns and cities on the floodplain were also part of a short-distance trade network with the surrounding agricultural areas and nearby towns.²¹ In connection with larger urban centres, there were marketplaces for the exchange of products.²²

Famous large cities include among others Uruk (550 ha, c. 2700 BC) in southern Mesopotamia and Nineveh (700 ha, c. 650 BC) in northern Mesopotamia. These were followed by Babylon (800 ha, c. 570 BC), which will be treated in more detail below. Characteristic for these cities is that they were abandoned after hundreds or even thousands of years of occupation and are now open for archaeological examination. Other cities like Damascus and Aleppo may also have been quite large, but because the modern cities cover the ancient ones, we have very little contemporary evidence from the ancient levels there (*Fig. 3*).

Most towns and cities have grown for many years and have an organic, irregular layout partly following the terrain, with winding roads and irregular agglomerated buildings. Some towns and cities or sections thereof are more planned, with a tendency to be round or square with straight streets and regular buildings. Often the size of the cities and their multilevel structures have not yet allowed complete geomagnetic surveys for underground town plans, but there is great potential for future research. A few examples will be discussed later on including Babylon, which will be treated in some detail.

The number of inhabitants in the very large cities mentioned above can only be approximated between 55000 and 300000. The estimations of population density in Ancient Near Eastern cities usually range between 100 and 200 persons/ha, but a maximum figure of just under 400 persons/ha is a possibility, all depending on the geographical area, the type of settlement, and the period in more recent history used as a point of comparison. These are just average figures for the whole settlement disregarding high and low density areas in the cities. Only future research that combines ethno-archaeological data with archaeological and textual evidence for large urban areas can lead to better estimates. One problem, of course, lies in trying to assess how much of a city or town consisted of areas with domestic housing, and another problem is the differences in density between different parts of a settlement. In certain periods and places buildings might have had more than one storey, which could also affect population numbers, allowing for a higher rate of occupation per surface unit.²³

During the last decades, there have been extensive excavations of a number of often quite large Bronze Age cities in northern Mesopotamia and to the west,

20 Neumann 1979, 1992.

21 Crawford 1973; Foster 1977.

22 Silver 1983, Zaccagnini 1987–1990 with discussion and literature. The conclusions by Polanyi 1957 regarding the non-existing public market places and the resulting lack of a consistent and institutionalized pattern of exchange is not wholly in keep with the material evidence from the ancient Near East.

23 Lower population density figures would be arrived at if the object of comparison consisted of traditional villages with more scattered housing and organic, non-linear street layouts. Higher figures would result from comparisons with settlements displaying more developed town planning. Wright 1969, 22–23; Adams 1965, 24–25, Frankfort 1950, 103–104; Zettler 1987, 15–17; Postgate 1994, 79–80; Kramer 1980. Adams (1981, 144) admitted to a figure of just below 450 persons/ha as “quite reasonable.” Cf. Hassan 1981. For dwelling houses with more than one storey, see for instance Woolley and Mallowan 1976, 25–26. Herodotus Book I, 180, talks of houses in Babylon sporting three or four stories.

often with spectacular results. Ebla (Tell Mardikh, 50 ha, c. 2300 BC) and Qatna (Tell Mishrifeh, 100 ha) in western inland Syria, as well as Shubat-Enlil (Tell Leilan, 90 ha) and Urkesh (Tell Mozan, 30 ha) in north-eastern Syria, are all examples of excavated sites, and there are many other, often smaller sites. The surrounding areas have also been surveyed, giving clear indications of the relation between the central city, sometimes with outside suburbs, and the surrounding landscape. The square layout of the wall around Qatna gives the impression of a planned city, which is only partly substantiated inside. More properly planned towns, possibly for military use, are small sites like the Old Babylonian Shadup-pûm (Tell Harmal) and Haradum (Khirbet ed-Diniye), approximately 2 ha in size.²⁴

When working with the excavation at Shubat-Enlil (Tell Leilan) in north-eastern Syria and the collapse of this city and others in the nearby area, the question of the reasons for this regional collapse came up. Was the political weakness of the government the main cause, or could, for instance, climatic change be a contributing or even main factor? As can be seen in the chapter by Holmgren and Finné, we are not convinced of all the implications suggested by the common, modern, climate interpretations of archaeological material, but the matter needs more study.²⁵

The long-term excavations of the Hittite capital Hattusha (200 ha, c. 1250 BC) have unearthed city walls, with sections of the city having their own walls, open spaces, and public buildings such as temples, palaces, and administration buildings. A recent find of the largest storage facilities in the Ancient Near East in the form of silos for 7000–10000 m³ barley shows the administrative facilities to secure the sustainability of the population.²⁶

Assyrian capitals in northern Mesopotamia during the Neo-Assyrian period 800–600 BC were relocated essentially from south to north along the Tigris: first Assur (80 ha), followed by Kalah (modern Nimrud, 380 ha), Dur-Sharrukin (320 ha) and finally Nineveh (700 ha). There may have been several reasons for the moves, but access to water was simplified by the move in a northerly direction, and as mentioned earlier these centuries may form part of a period with less precipitation in the Van area near the sources of the Tigris. This is one of several possible links between modern climate data and history that have to be examined carefully.²⁷

Cities in Egypt

The Nile valley is the earliest urban development in Africa. When attention is given to the change from 1–2 ha mobile encampments and early sedentary settlements to larger aggregated settlements it is usually focused on the Predynastic period which is seen as a precursor to early Egyptian Dynastic urbanism.²⁸ Of particular interest is the site of Merimde Beni-Salame from the early 5th millennium BC, excellently published and with an estimated area of 25 ha.²⁹ The recent

24 Anastasio 1995; Anastasio *et al.* 2004; Lehmann 2002; Bonacossi 2008; Miglus 2006–2008; Kepinski-Lecomte 1992.

25 Weiss *et al.* 1993; Staubwasser and Weiss 2006.

26 Seeher 2000.

27 Altaweel 2008.

28 See e.g. Hassan 1988, Connah 2001, 2005, and Kemp 1989 for summaries.

29 Eiwanger 1984, 1988, 1992.



Plate 1. El-Kab, the 30 ha ancient town of Nekhet / Eileithyiaspolis in southern Egypt next to the Nile, consisted of mud-brick houses surrounded by a town wall with a monumental temple in the centre. Photo credit I. Hein.

important contribution by Kuper and Kröpelin provides an up-to-date view of climatic variability for the whole of north-east Africa.³⁰

Given the earlier doubts about the existence of urbanism in Egypt, the past 50 years have seen remarkable developments in the field of urban studies. It is often said that much of the evidence for early urbanism has been destroyed or lies out of reach below fertile agricultural soils, but studies of what remain must be classed as one of the success stories of archaeology.³¹

A series of fundamental contributions to our current understanding of urbanism have been provided for the Lower Nile Valley and Delta³² and for Nubia.³³ Excellent analytical overviews of the Nile Valley can be seen in the work of Kemp and others. Hassan integrated a detailed assessment of Nile flood levels and climate change with his analysis of the development of urban settlement systems, showing the correlations between periods of low floods and the first and second intermediate periods as times of crisis for urban society in Egypt. This work has provided an estimate of the number and territorial extent of villages and towns and their likely demographic composition (*Plate 1*).³⁴

The analytical frame outlined above provides a context for appreciating the detailed work on individual urban site complexes in 4th-millennium Predynastic Egypt, such as the serially hegemonic capitals of Naqada, Hierakonpolis in Upper Egypt, and the recently well-excavated town at Tell el-Farkha (4.5 ha) in the eastern Nile Delta. The latter settlement already shows functional splitting between different areas of the town. A first monumental building from the mid-4th millennium BC was found, which leads to the interpretation of the site as “residence, combined with stores” for trade supervision by the people of the Naqada culture in the north of Egypt.³⁵

The Early Dynastic towns of Sais and Buto in the Nile Delta were apparently associated with early trade to West Asia. Other towns such as the walled settlement of Abydos were cult centres. The typical spatial layout of Early Dynastic

30 Kuper and Kröpelin 2006.

31 Sjöberg 1960.

32 Butzer 1976; Kemp 1977a, b; Bietak 1979, 2010.

33 Trigger 1972, 1985; Adams 1977.

34 Kemp 1989; O'Connor 1993; Hassan 1993; Troy 1999.

35 Chłodnicki, Fattovich and Salvatori 1992; Kołodziejczyk 2005; Ciałowicz 2007.

towns from c. 3200–2700 BC shows a walled, relatively densely settled core with functionally differentiated ritual, administrative, and production sectors.³⁶

Besides the naturally developed town structures, the planned settlement plays an important role rather early in Egyptian history. The pyramid towns of the Old Kingdom belong to this category. One of the best examples is the town community at Heit el-Ghurob in Giza, which served the construction and maintenance of the pyramidal area in around 2500 BC, and which can be traced to an extent of at least 7 ha. The construction contained a separate quarter with regular “galeries”, probably serving the accommodation of people.³⁷

Among excavated settlements from the early Middle Kingdom we recognize in the earliest level at Tell el-Dab’a the structure of an orthogonally constructed settlement for a state-run colonisation town near the north-eastern border, a construction which had an enclosure wall, serving the establishment of royal administration.³⁸ The town Kahun, which often serves as a model town for the Middle Kingdom, showed around 1870 BC a grid-planned street system of 12–14 ha in extent with subdivisions apparently for different social classes.³⁹

In the Middle Kingdom, the fortresses in the southern border area in Lower Nubia were established, as exemplified by the Buhen complex (approx. 1.3 ha) in the second cataract, and during the New Kingdom the protected areas within the fortress walls were enlarged and open town sites grew up in the vicinity.

In the New Kingdom, a renewal of the fortifications in the border areas took place, whereas in the interior the urban settlements underwent a significant expansion in size and complexity dominated by two themes, namely kingship and ritual cults.

Tell el-Dab’a had expanded already earlier, in the Second Intermediate Period, and formed the large city of Avaris, with a palatial quarter at the main riverside including a garden and protected by a fortified wall (extension not known); the city expanded over several mounds (estimated size 250 ha, c. 1580 BC). During the early New Kingdom, it served as a residential area in the Delta for the Egyptian court, and continued around 1250 BC on a greater scale as part of the Ramesside Delta capital of Piramesse, doubtless with military installations, and huge temple estates including vineyards were established.⁴⁰

A generous wide open spatial planning can be seen in the short-lived (17 years) freshly created residential town of Tell el-Amarna in Middle Egypt, located in a bay on the Nile and surrounded by natural cliffs, with a built-up territory of about 600 ha. The population is estimated to 30000 or more around 1370 BC.⁴¹

The temple cities of Thebes, Heliopolis, and Memphis, with the exception of Heliopolis with its religious focus, were also at times seats of kingship. Memphis, which also served as a military centre, has some 300 ha of visible remains.

The extension of the analytical frame southwards⁴² brings into sharp focus problems with identifying the now partly submerged urban history of Nubia. The site of Qasr Ibrim is one example which shows a very long established urban

36 Hassan 1993; Troy 1999.

37 Lehner and Tavares 2010; Lehner, <http://www.aeraweb.org/map/index.htm>,

38 Czerny 1999.

39 Often quoted as Lahun or El-Lahun, see Quirke 2005 and Bietak 2010.

40 Uphill 1984, Bietak, Marinatos & Palivou 2007; for vineyards see Hein & János 2004, Bietak 2010.

41 B. Kemp, http://www.amarnaproject.com/pages/amarna_the_place/index.shtml

42 E.g. by O’Connor 1993.

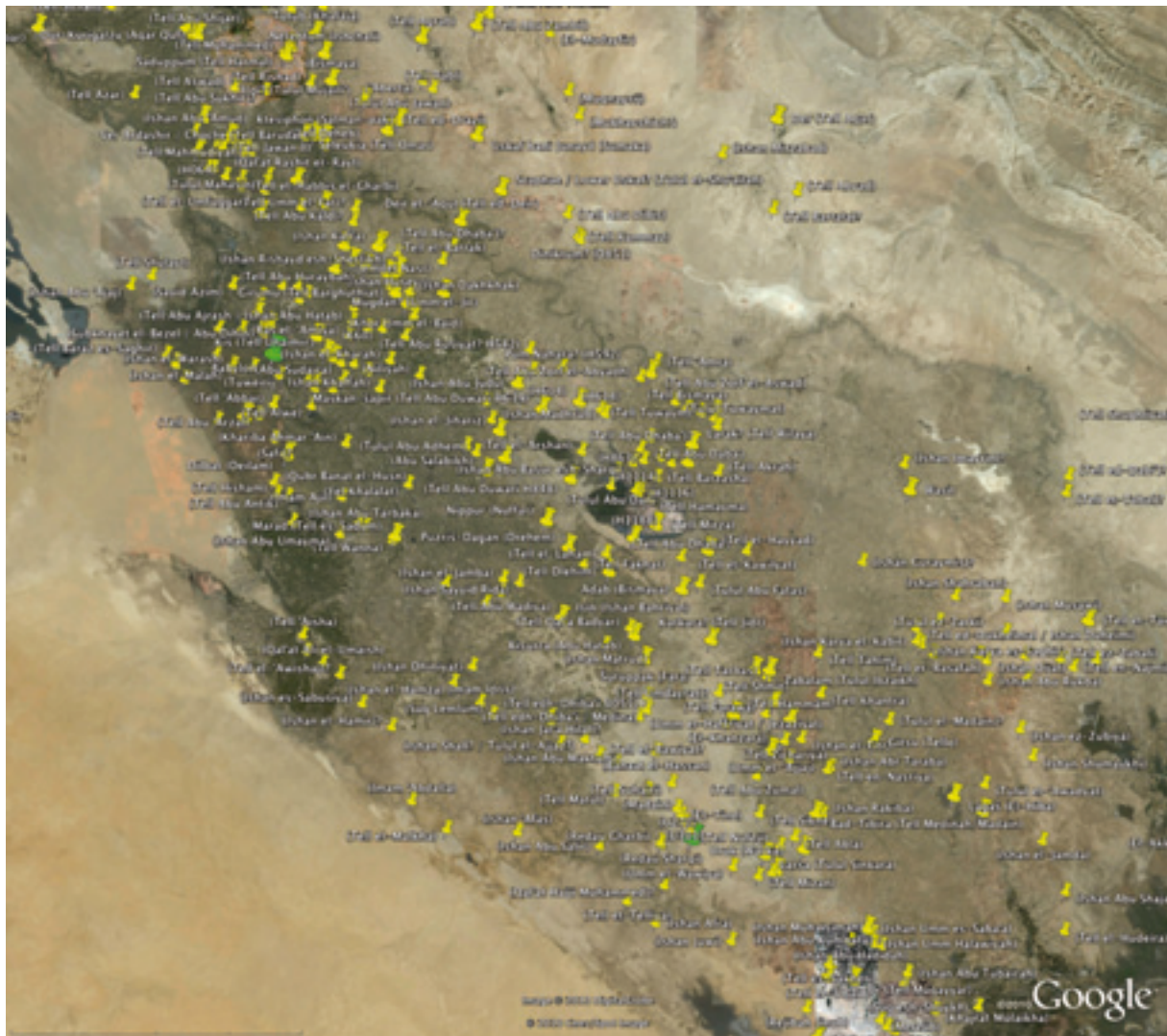


Fig. 4. Southern Mesopotamia with downloadable placemarks from ANE.kmz showing ancient towns and cities. Scalable in Google Earth where all names are easy to read. The Euphrates and Tigris flowing from the northwest to the southeast through the flat alluvial landscape. The towns and cities were located along river branches and canals. The river branches sometimes diverted, leading either to the construction of new canals or to the abandonment and relocation of towns and cities. Picture by O. Pedersén using Google Earth Pro.

tradition which spanned a number of different cultural divides from the beginning of the first millennium BC until after the 17th century AD; even an earlier foundation may be assumed because of rock chapels from the New Kingdom.⁴³

The major contribution of recent years, however, must be the excavations at Kerma which have provided significant new details on what is probably sub-Saharan Africa's first urban settlement, based on grain cultivation and cattle keeping and extending to 20 ha at its height in c 1500 BC.⁴⁴

In the longer term slow variables of the *longue duree* acting of the urban settlement systems of the Nile Valley, there seems to be a spatio-temporal shift southwards at multiple century scale of later urban development with Napata and Meroe as prime examples. In accounting for these shifts in emphasis, one might point to increasing complexity and vulnerability of the urban sites themselves in addition to slow-acting variables of climate change with its direct effects

43 Caminos 1968.

44 See Bonnet 1990, 2004, Bonnet *et al.* 2006; Connah 2001 for summaries.

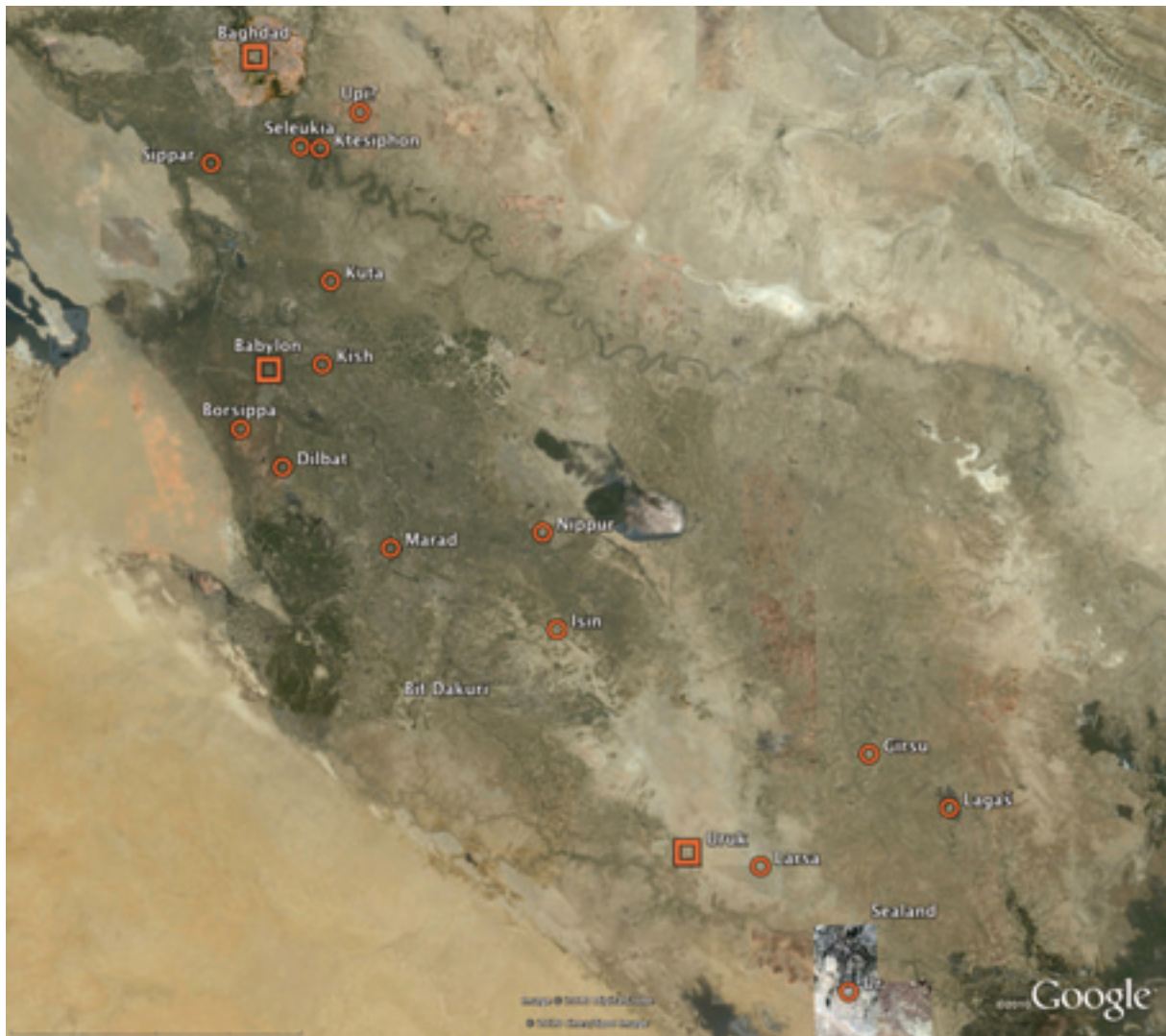


Fig. 5. Southern Mesopotamia with placemarks from ANE.kmz showing ancient cities mentioned in the text for the same area as in Fig. 4. In ancient times river branches and canals connected the cities. Picture by O. Pedersén using Google Earth Pro.

upon cattle-grazing resources as well as salinization affecting agrarian production systems, and metal working depleting wood resources. Multiple factors affecting different aspects of the urban settlement system are most likely to have induced the changes.

Mid-scale perspectives: southern Mesopotamia

Alluvial deposits from the Euphrates and Tigris have created the vast southern Mesopotamian floodplain. Movements of the rivers and deposition of silt, but also of mineral salt in the soils, have been crucial factors in creating the landscape, providing opportunities but also degrading what is there. The regular precipitation on the southern Mesopotamian floodplain is too low for rain-fed agriculture. However, with the proper use of irrigation it is possible to have an agricultural landscape that can feed large cities. There have been several changes, some of them major, in the landscape over the millennia. Details have been studied

during the last century, but there is still much more to be done to understand the interplay between different decisive factors. A first glance at a map or a satellite photo shows the Euphrates in the western end of the plain and the Tigris in the eastern. The Euphrates in particular is often split into several branches (Arabic Shatt). Between the rivers, there are several remnants of ancient river branches or canals with abandoned cities along the dried-out water courses.

During earlier millennia both rivers flowed more toward the centre of the floodplain. Yearly deposits in the flat landscape not only make agriculture possible, but also result in a long-term movement of the rivers. The states along the rivers and river branches were forced to direct or redirect rivers and canals manually. This was mostly successfully done, but occasionally huge unintended changes occurred.⁴⁵

There are no good proxy climate data sets available from southern Mesopotamia itself, so paleoenvironmental information from the surrounding areas has to be used (see above). The data from Van in the north are highly relevant in regard to the amount of water in the Euphrates and the Tigris, the foundation for the necessary irrigation. The nearest proxy data from western Iran show different trends than the northern material. The south-eastern monsoon data, as far as incursions from that direction can be shown to be relevant, also partly point in other directions. Much more basic research has to be done here in the future. The few boreholes from Mesopotamia itself have so far not produced any published climatological data. Here new research may well change the picture.⁴⁶

Landscapes in southern Mesopotamia

There have been several archaeological surveys during the last 60 years attempting to trace the ancient river branches and the locations of the ancient sites in southern Mesopotamia. The findings of large amounts of ancient cuneiform texts on sites and the reading of these texts have made secure identifications of ancient city names possible. Other less secure identifications may be based on circumstantial information from texts that do not come from the site itself (*Figs. 4, 5*).⁴⁷

The rivers, river branches, and canals are in principle flowing on a somewhat higher level than the surrounding terrain. This is the opposite of a rain-fed landscape. Yearly inundations and depositions of silt occur especially in the months after the snow melts in the mountains. The states tried as far as possible to control the whole riverine system. The need of organization and control of landscape and irrigation, and the resulting administration, may be important driving forces behind the creation of towns and cities.⁴⁸

The landscape consisted of hundreds of cities, towns, and smaller settlements situated along a network of river branches and canals. The whole riverine system is a combination of natural landscapes and effects of human activities. Any kind of neglect or mismanagement can result in problems with salinization of the soil, unwanted inundations, areas turning into desert, and movements of the rivers. A good political control was essential for keeping the landscape in order. Unstable

45 Adams 1981, 14–22.

46 Wilkinson 2003, 15–32; Verhoeven 1998.

47 See Gasche 1989, 111–131 for the identification of several of the major settlements on the Mesopotamian floodplain, predominantly with occupation from the Old Babylonian period.

48 Adams 1965, 1981; Adams and Nissen 1972; Gibson 1972.

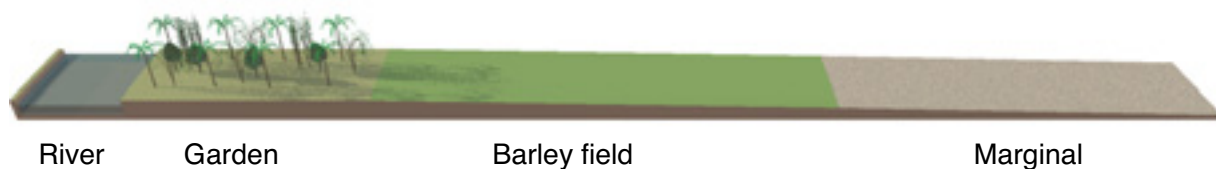


Fig. 6. Schematic representation of a long and narrow agricultural unit on a surface sloping away from a river. The agricultural unit consists of garden, field, and marginal land often used for grazing. Picture by O. Pedersén using ArchiCAD.

situations and war may cause serious problems undermining the livelihood of hundreds of thousands of people.⁴⁹

Gardens and fields in ancient as in modern times were situated along river branches or canals next to the settlements. As a rule, the production units consisted of long, narrow strips of land with the upper short side situated closest to the water. Here, gardens with date palms were placed; vegetables and fruit trees could be found under the date palms, and occasionally also a house. At some distance, there were fields often for barley, and farther away were pasture areas and unused, occasionally salty land. This is the standard scheme that can be observed both in ancient cuneiform texts as well as in the pre-modern and even modern landscapes (Fig. 6).⁵⁰

In recent decades, there have been new studies of the ancient environment of the landscape in the northern part of southern Mesopotamia, leading to altered reconstructions of the ancient river positions. In the eastern part of southern Mesopotamia these questions have never been properly investigated, but now satellite images are used to prepare future field research, and studies are conducted on Persian Gulf shorelines with surrounding areas.⁵¹

The Euphrates repeatedly shifted in stages towards its present course at the rim of the western plateau. A major move of the Euphrates westwards has been proposed for the Old Babylonian period. This may be a reason for the apparent lack of evidence for habitation in cities in the southern part of the Mesopotamian floodplain during the late Old Babylonian and early Kassite periods, c. 1700–1400 BC, an issue that has been discussed at some length in academic writings over the last 20 years. Several cities may indeed have been deserted in the southern area, but cuneiform texts that have recently been made available, for instance from the First Sealand dynasty (c. 1500 BC), indicate that modified explanations may have to be proposed. The precise dates of moves, detailed reasons, and effects must be a matter of future research that could lead to very interesting results.⁵²

The last 60 years have resulted in what may be described as a radical change of the agricultural landscape. New main canals with networks of adjoining minor

49 Jacobsen and Adams 1958. Diverting rivers as a wartime act is witnessed in cuneiform sources, e.g., Kutscher 1989, 118.

50 Wirth 1962; Postgate 1994.

51 Gasche and Tanret 1998; Hritz 2004; Gasche 2004, 2005, and 2007.

52 A lack of datable material from late Old Babylonian and early Kassite periods in southern Mesopotamia has been noticed by Gasche 1989, 109–143, Plan 8; Gibson 1993, 8; Adams 1981, 155–158, with fig. 27–28; Wilkinson 2003, 85. Charpin, in Charpin *et al.* 2004, 342–346, has pointed to textual evidence for moving persons and cults from the southern to the northern parts of the Mesopotamian floodplain. The recent publication of cuneiform texts from the first Sealand dynasty by Dalley 2009 seems at least partly to indicate more continuity in the south.

canals in regular shapes have been created by means of construction machinery. Therefore, for the description of what is here called modern traditional agriculture, the standard agro-geographical work by E. Wirth based on materials available in the 1950s and early 1960s is of importance, giving detailed information about the situation before the main modern reworking of the agricultural landscape in Iraq started. However, it can be seen that many of the modern irrigation canals more or less follow previous alignments of rivers and ancient canals, so it is not a total change but rather a reworking of the landscape.⁵³

As of 1955 three large artificial lakes west of the plain serve as seasonal reservoirs in addition to the traditional inundations of marshes.⁵⁴ In recent years, a series of new dams have been constructed on the Euphrates and the Tigris in Turkey, Syria, Iran, and northern Iraq. This will continually diminish the water available in southern Mesopotamia.

Cities in southern Mesopotamia

Beginning in the mid-19th century, there have been a large number of excavations of important cities and towns with constantly improving archaeological techniques and methods. Most of the excavated and many of the unexcavated ancient cities and towns have been marked on the downloadable ANE.kmz for Google Earth (Figs. 4, 5).

Some important cities in southern Mesopotamia can be listed from approximately 3000 BC to AD 760, and roughly speaking from south to north with an indication of their size inside the city walls: Ur (70 ha), Uruk (550 ha), Larsa (350 ha), Lagash (440 ha), Girsu (350 ha), Isin (120 ha), Nippur (220 ha), Babylon (800 ha), as well as Seleucia, Ktesiphon and Baghdad; among these only the last is still inhabited.

Over the course of centuries, there seems to be a trend in movement of political power from the southernmost part of southern Mesopotamia to the middle and finally to the northern part of the southern Mesopotamian alluvial plain. There is also a movement from different branches of the Euphrates to the Tigris on the east part of the plain. If this apparent move of political power in a northward direction should stand the test of future archaeological findings from the south, it may be questioned whether there is an environmental reason for it, like salinization of soils or climate change, or if there is a political explanation, or indeed a combination of factors.

Two primary periods of growth in numbers of large settlements and aggregation of population in urban centres on the southern floodplain are c. 2900–1800 BC and 500 BC–AD 500.⁵⁵ The first of these periods represents the formative phase of cuneiform literature. As indicated above, in literature as well as in bureaucratic sources the Sumerian *uru* and the Akkadian *ālum* were used to denote towns and cities. Other terms could be used for villages in an agricultural landscape or suburbs of a larger urban centre. No further distinction based on size or importance seems to have gained prominence.⁵⁶ Cities and towns were situated next to rivers and canals as seen above. Some large cities also have a river or canal

53 Wirth 1962.

54 Lebon 1955.

55 Wilkinson 2000.

56 Hallo 1971; Adams 1981, 136–137.

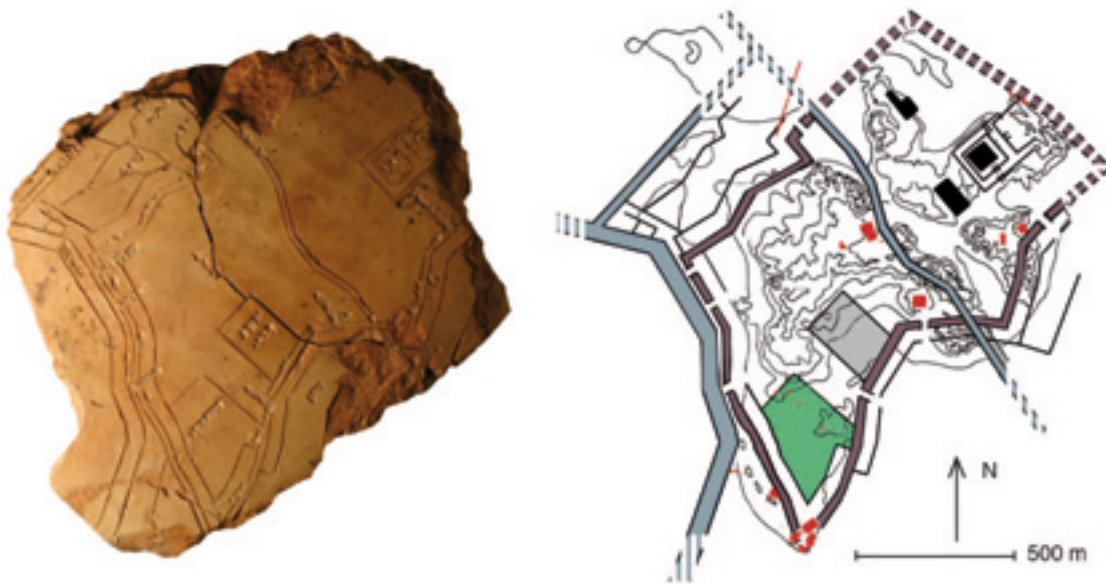


Fig. 7. Map of Nippur (220 ha) to the left on a clay tablet from c. 1200 BC. To the right, coloured features from the ancient map placed on a modern excavation map. Blue river and canals, brown town wall, green garden, and black main temple according to the clay tablet. Excavations have unearthed the black temples, and the other red areas. Photo credit M. Krebernik Hilprecht-Sammlung Jena and picture by J. Andersson.

in the middle dividing the city into at least two parts. This was the situation, for example, in Uruk, Nippur, and Babylon, which will be discussed further below.

In the early periods, Uruk was the largest city in the southern part of southern Mesopotamia. A city wall dated to the early part of the Early Dynastic period (c. 2900–2300 BC) surrounded the city. The Gilgamesh epic claims that King Gilgamesh (c. 2700 BC) constructed the wall; we have no definitive proof but the dating and general circumstances may allow it. Within the walled city there were large temple complexes. In fact, the Gilgamesh epic ascribes 14 per cent of the city to temple complexes and twice that space within the city to gardens, probably an ideologically motivated statement but possibly with some merit. Gardens and canals are attested and reconstructed in Uruk more than 2000 years later, during Neo-Babylonian and Hellenistic times.⁵⁷

A famous clay tablet from the Middle Babylonian period shows a map of the city Nippur. Town walls with several gates surround the city. River branches and canals run along the outskirts of the city as well as in the middle, dividing it into two main sections. Several temples are marked, and in the southwest corner a large area inside the city walls is described as a garden (*Fig. 7*).

The city was a central concept in the Sumero-Akkadian outlook on the world. Each city had a supreme divinity, connected with gods of other cities by means of kinship. Sumerian hymns extolled the qualities both of the cities and of their deities.⁵⁸ The destruction of cities was considered a consequence of desertion by the gods.⁵⁹ Even the afterlife was sometimes pictured as an immense city, with a bureaucratic regime mirroring that of the world of the living.⁶⁰ On a more pragmatic note, Sumerian proverbs and debate literature often made use of the dis-

57 Cocquerillat 1968; George 2003.

58 Biggs 1974: 45–56; Sjöberg and Bergmann 1969.

59 Cooper 1983; Michalowski 1989; Tinney 1996.

60 Katz 2003; Bottéro 2001, 105–110.

inction between city and countryside. The distinction led to humorous contrasts between city dwellers and their rural counterparts, with the latter most often emerging morally superior.⁶¹

There are many basic questions still to be answered about urban life in southern Mesopotamia. An obvious problem is that the location of one of the most glorious capitals, Akkad c. 2200 BC, has not yet been established. The south-eastern part of the plain has hardly been studied, and here numerous towns were situated. The present lack of climatic and environmental proxy data makes reconstructions preliminary, but there is a large potential for future research on long historical development of cities in this core area of historical urban development.

High-resolution perspectives: Babylon

Babylon was long a leading city in the world. The most famous periods were when the city was capital of Babylonia during the reign of Nebuchadnezzar II (604–562 BC in the Neo-Babylonian period) and about a millennium earlier during the reign of Hammurapi (1792–1750 BC, middle chronology) in the Old Babylonian period. The most magisterial period of Babylon was as capital during the Neo-Babylonian period under Nebuchadnezzar II when it was the largest city in the world within city walls. Whereas the capital of Hammurapi is known from references in contemporaneous documents from other sites, the high groundwater level has so far made it virtually impossible to reach that level by means of normal archaeological excavations. The situation is quite different and archaeologically much more promising for the Neo-Babylonian capital. The city was gradually abandoned during the Hellenistic period and many inhabitants moved to Seleucia on the Tigris and later on to nearby Ktesiphon. Finally, all these cities were abandoned and the capital moved to Baghdad.

The ruins of Babylon are situated near the west end of the northern half of the fertile floodplain of southern Mesopotamia some 85 km south of Baghdad, the modern Iraqi capital. On the immediate south side of Babylon are the outskirts of the modern city of Hilla, the capital of the modern Iraqi province that has also been given the name of Babylon.

Owing to its abandonment, Neo-Babylonian Babylon is rather well preserved and easy to reach from the surface, and has yielded a huge amount of archaeological information including remains of many buildings of different types and several thousand contemporaneous cuneiform clay tablets from ancient archives and libraries in the city, giving information about a number of different aspects of city life. It is a great advantage to archaeologists when texts are written on clay tablets.

Landscapes of Babylon

The branch of the Euphrates flowing through the city has dominated the landscape around Babylon all the way up to present time. The area is traditionally, like the area around Baghdad, a centre for intensive, small-scale agricultural units often with gardens for growing vegetables and fruits.⁶²

61 Alster 1996; Hallo 1971.

62 Wirth 1962.

The nearest cities were situated 15 to 30 km away and included Kish, Borsippa, Dilbat, and Kutha. Upstream and downstream along the Euphrates lay the towns of Sippar and Marad, located some 60 km away. The landscapes between were full of other towns and smaller settlements; hardly any of these have been well studied.

Water management was essential for the area. The impressive system of river branches and canals had to be constantly updated and taken care of. Sometimes new main canals were laid out in the landscape, for example between Babylon and Kish in the Neo-Babylonian period. Modern constructions in the landscape have often led to considerable changes, but the ancient systems can often be seen because modern irrigation canals tend to be built on or next to the remains of ancient canals.

According to ancient cuneiform texts, canals could be found in all directions from Babylon: the New Canal to the northwest, the Borsippa canal to the southwest in the direction of Borsippa, the Old Kutha canal in the northeast, the Banitu canal to the southeast leading to Kish, and the Piqudu canal to the south. The New Canal, the Borsippa canal, and the Banitu canal can be approximately identified in the landscape.⁶³

In inscriptions of Nebuchadnezzar II, reference can be found to two huge dams, which he ordered to be constructed. One of them extended from the vicinity of Babylon all the way to Kish some 15 km to the east, and the other was even longer, some 60 km north of Babylon from Sippar in the west to Upi in the east. The northern dam has been traced archaeologically in the area of Sippar. In the areas north of both dams were large marshes with water. This was part of a constructed landscape. According to the inscription, the dams were supposed to serve military defence purposes. They were, however, also part of the large reserves of water used during the late parts of the agricultural season. Such water reservoirs were mentioned by ancient kings in their inscriptions and have been part of the landscape at least during periods of strong political power. For all their worth economically and militarily, such dams demanded regular upkeep and military supervision to safeguard against sabotage. The modern variant can be seen in the form of the water reservoirs in the west of southern Mesopotamia.⁶⁴

The most common agricultural units in the area of Babylon were long, narrow pieces of land, similar to those referred to above in southern Mesopotamia (*Fig. 6*). The upper short side was situated at a river branch or canal. Here, near the water, the gardens were placed; at a distance, there were fields, often for barley. A basic unit could be about 20 metres wide with room for two rows of date palms and could be several hundreds metres long. The description fits well both with numerous cuneiform texts dealing with agriculture and with modern traditional agriculture around Babylon; most units are 1–25 ha in size.⁶⁵

A large number of gardens with date palms were situated around Babylon, but according to contemporaneous cuneiform documents the gardens sometimes also lay in the area between the inner and outer eastern city walls. Ancient legal documents testify that there were several families living inside Babylon that owned gardens and fields in areas around the city. Other persons, who often leased the fields and gardens, conducted the actual work on the fields and in the gardens. Even if the green areas inside the outer city wall served as possible expansion

63 E.g., Wunsch 2000; Zadok 1985.

64 Gasche *et al.* 1987, 1989.

65 Wirth 1962.



Fig. 8. Babylon was supplied with barley and dates by means of state-organized boat transport from the main cities, tribal area, and the southern Sealand inside the yellow ellipse. In addition, locally produced vegetables, barley, and dates came by means of land transport from the near surroundings. Metal, timber, and luxury items came from farther away, often from the mountainous surroundings. Picture by O. Pedersén using Google Earth Pro.

areas for construction of buildings, they also provided security in times of siege and reservoirs for ecosystem services.⁶⁶

The surrounding fields and gardens could not provide sufficient food for such a large city as Babylon. Therefore, large-scale, state-organized transport of food was carried out by boat along the Euphrates to Babylon. According to the cuneiform documents in the palace archive dating to the reign of Nebuchadnezzar II (604–562 BC), a fleet of ships brought barley in huge quantities from several cities in the area between Sippar in the north down to Marad in the south as well as from the Chaldean tribal area of Bit-Dakuri further downstream and the Sealand in the southernmost Mesopotamian wetland. The barley was stored in

⁶⁶ Wunsch 2000; Baker 2009.

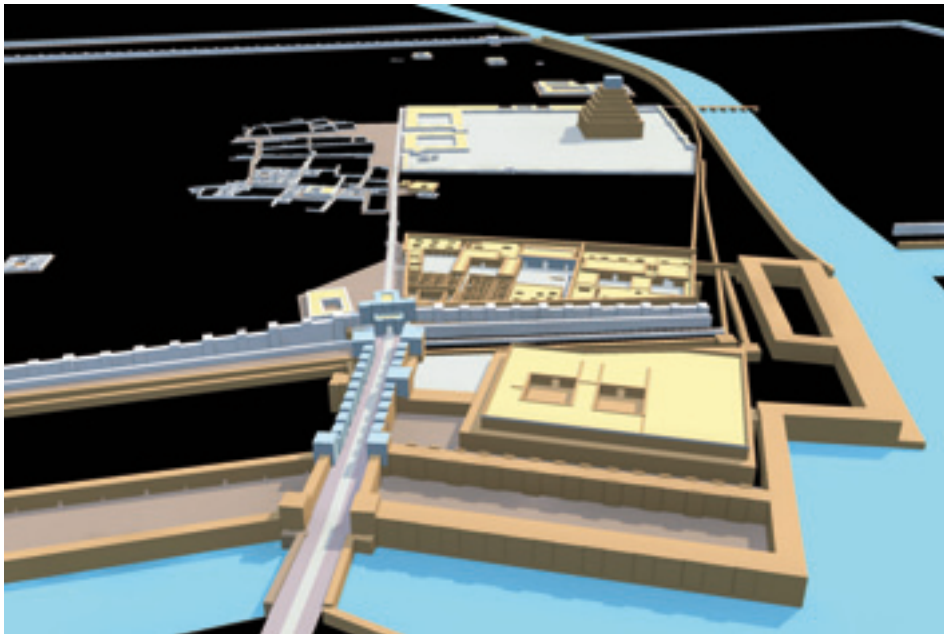


Fig. 9. A preliminary version of the digital model of Babylon seen from the north. Part of the city with the Euphrates and moats, city walls, Street of Procession, Ishtar Gate, palaces, zikkurat, some temples, and a few private houses. Most details are missing. Somewhere in the palace area, the famous Hanging Gardens were situated according to later Greek authors. Picture by O. Pedersén using ArchiCAD.

Babylon in large silos supervised by the palace (*Fig. 8*).⁶⁷ The ecological footprint of Babylon stretched across a more than 300-kilometre-long oval shaped area in terms of subsistence but much more widely in regard to imported metal, timber, and luxury items.

City of Babylon

A preliminary digital model of Babylon has been prepared for the project.⁶⁸ Essentially the main public buildings existing during the reign of Nebuchadnezzar II have been given a preliminary reconstruction. The historical information used for the reconstruction is on the one hand the published archaeological evidence from the German excavations 1899–1917 supplemented with later results from the Iraqi excavations, and on the other hand the large number of contemporaneous building inscriptions found during the excavations as well as a preliminary utilisation of the huge amount of often basically unpublished clay tablets with cuneiform writing that were found on the site (*Fig. 9*).⁶⁹

In the next step of the project, separate levels for different historically and archaeologically attested periods will be added to the preliminary model. The plan is also to add to the model the well-known wall decorations, for example at the Ishtar Gate and the Street of Procession. The model will be used to answer a number of questions connected with city development, such as the impact of historical and environmental factors, and will of course also generate new questions.

⁶⁷ Pedersén 2005a N1, and forthcoming.

⁶⁸ The ArchiCAD program has been used. Support for the work with the digital model of Babylon has come from Urban Mind, Uppsala University, and Excellence Cluster Topoi at Freie Universität Berlin.

⁶⁹ Koldewey 1990 and Pedersén 2005a both with detailed bibliographies.



Fig. 10. Babylon divided by the Euphrates flowing from north to south through the city. Inner city east and west of the river. Outer eastern city. All enclosed by means of town walls and moats. The excavations were concentrated to the east side near the river with palaces, temples, and living areas. Some green fields are reconstructed along the river and the approximate alignment of some main canals. Picture by O. Pedersén using ArchiCAD.

The earliest known history of Babylon does not stem from findings in the city itself but is known from other cities. The high modern groundwater level in Babylon makes it impossible to excavate the lower archaeological levels at present time.⁷⁰

For several centuries Babylon consisted of the inner east and west cities divided by the Euphrates, which flowed through the middle. The size of Babylon was at that time some 400 ha or 4 km². During the reign of Nebuchadnezzar II in the 6th century BC, he expanded it with the outer eastern city to twice the previous size, approximately 800 ha or 8 km². These are the measurements of the areas inside the city walls. The density of occupation is not known except for in selected archaeologically investigated areas. There existed densely populated areas, monumental buildings, fortifications, waterways, green areas, open spaces, and streets. Based on the approximate estimations of population density referred to above, the number of persons inside the city walls would be about 80000 to 300000, but such approximations are quite uncertain and based on more modern comparisons. The ancient names of a number of suburbs around Babylon outside

⁷⁰ Gibson 1972 reported the finding of Early Dynastic III pottery in the city area. Sollberger 1985 has presented a preliminary historical overview of the oldest textual material.

the city walls are known, but so far the location of only one possible suburb has been established.⁷¹

Babylon (*Fig. 10*) had for many centuries the characteristics of a main Ancient Near Eastern city. There were several temples, a main palace complex and other administrative buildings, city walls surrounding the central part of the settlement, main streets, and a huge number of private houses for living and manufacture. During the reign of Nebuchadnezzar, there was a great change not only in size with the enlargement of the eastern outer city wall but also in monumentality. Many of the public buildings were enlarged and rebuilt using baked bricks instead of traditionally unbaked mud bricks. The bricks were of such a good quality that until the Babylon excavations around 1900, they were constantly broken away from the ancient walls and reused in modern buildings in nearby towns and cities.⁷² Examination of bricks may provide not only information on the firing used for the large-scale brick production but also data about subsistence, as plant remains often become embedded in the fabric of bricks.

The Euphrates flowed for centuries through the middle of Babylon from north to south, west of the palace. According to the excavators, the Euphrates changed its course and cut through the eastern inner city, east and south of the palace area in late Achaemenid-Hellenistic times. They assumed that the Euphrates might have reverted to its old course west of the palace during the Parthian period. In modern times the Euphrates branch cuts through the western city. We may suggest a topic for further studies, namely that *one* possible reason for the change may have been Nebuchadnezzar's expansion of his palace into the river, which thereby did not give high floods enough leeway.⁷³

The city walls around the inner city consisted of two massive walls with a street in between. Outside this complex were a quay wall and an 80-metre-wide moat with water. Around the new eastern outer city, there was a similar construction providing the eastern half of the city with a double fortification system. It must be remembered that in later Hellenistic Greek tradition these walls of Babylon were one of the architectural Wonders of the World.⁷⁴

Among the eight gates in the city walls around the inner city, the four of the eastern inner city have been excavated. The most famous was the Ishtar Gate next to the palace attested in an inscription already 1000 years before Nebuchadnezzar.⁷⁵ He rebuilt it and made it into a magnificent piece of architecture with figural decorations of glazed coloured bricks. He also raised, by several metres, the level of the main Street of Procession together with the Ishtar Gate and the palace area nearby, as well as some temples. The reason given in his inscriptions was to enhance monumentality but also to provide protection from the high groundwater, which obviously caused problems.⁷⁶

71 A detailed survey of the area is badly missing. The first archaeological attestation of a suburb of Babylon may be Tell Abu ez-Za'ad some 3 km south of the outer city wall of Babylon in the north-eastern outskirts of present-day Hilla. The reports at the ICAANE in London 2010 to be published in *Sumer* showed, however, Parthian remains on the excavated floors.

72 Koldewey 1990.

73 Koldewey 1990. There is an ongoing discussion about the dating of the river branches in Babylon, but only a new examination of the levees themselves can settle the precise dates.

74 Koldewey 1990.

75 Pientka 1998.

76 Langdon 1912.



Plate 2. The remains of central Babylon seen from a helicopter in southern direction. Reconstructed moat with water, area of Main Palace ruins, partly reconstructed South Palace, area of main temples with no longer visible remains of the great zikkurat tower. In the background the Euphrates arm hidden between palm trees and the modern provincial capital Hilla in the far back. Photo credit James Matise.

The highest building in Babylon was the tower, the zikkurat, belonging to the temple of the main god Marduk. Nebuchadnezzar's rebuilding had a foundation 90 x 90 m and was 90 m high, and would have been visible from far away in the flat landscape. It figures as the Tower of Babel in the Bible.⁷⁷

The town planning of Babylon, as far as it is known from the different periods, represents a mixture of organic aggregation and planning. The straight lines of the city walls, the almost rectangular inner city walls, some main almost straight streets, and monumental buildings with often almost rectangular plans are quite well known. However, only seldom does perfect symmetry, long straight lines, or 90-degree angles on a large scale occur. There almost always seems to be evidence for modifications of a partly planned scheme. This is quite apparent in the areas with private houses, where buildings are often irregular, and streets and lanes may be winding and reflect older historical constructions. There is a great need of geomagnetic surveys of the whole city area. In the older inner city, it may be difficult to distinguish between levels from different periods, but the eastern outer city created by Nebuchadnezzar which is hardly examined archaeologically may turn out to be a one-level city more suitable for such a survey (*Plate 2*).

Babylonian topographical texts give a detailed contemporary description of sections of the inner city of Babylon. Forty-three temples, the two city walls, the eight city gates, and several of the streets are referred to by name. Other information is totally missing at least in preserved parts of the text; for instance, there is no reference to the palaces in Babylon, which are otherwise well known from both archaeological excavations and a number of other texts. The topographical

⁷⁷ Schmid 1995 with a continuing discussion, for which cf. George 1992 for cuneiform texts and George forthcoming for a stone stele.

texts are also silent on the subjects of houses for living, business, trade, and early industrial production. All this has to be supplied by means of other textual or archaeological sources.⁷⁸

The population of Babylon during Nebuchadnezzar's reign was mixed. Babylonians and Chaldeans representing the old inhabitants spoke Babylonian, an Akkadian dialect, while other groups distinguished themselves as Arameans and spoke their own language. In addition, there were large groups of people from all over the Babylonian empire, as well as outside it. Even hundreds of foreign mercenaries are attested in Babylon for protection. Sumerian, no longer a spoken language, continued to be used for scholarly and religious purposes. Information about the people can be found in the archives and libraries with cuneiform texts on clay tablets preserved in the city.⁷⁹

The largest Neo-Babylonian private archive so far excavated concerns members of the family Egibi. When found in southern Babylon during early clandestine excavations in the 19th century, it numbered possibly a few thousand clay tablets, preserved in a series of clay pots. Among them are some 250 tablets dealing with the family members' ownership of agricultural fields and date palm gardens in the area of Babylon. The gardens are essentially situated outside the city walls, but there are also examples of gardens between the old inner and the new outer city wall in the east.⁸⁰

One of the architectural Seven Wonders of the World was the Hanging Gardens in the palace of Nebuchadnezzar, occupying a pride of place among Ancient Near Eastern man-made constructions. These gardens were not mentioned in any preserved cuneiform text and the location in the palace area has never been definitively proven. However, there have been many suggestions. Another exclusive garden was the Juniper Garden attested with religious functions at least during the later Hellenistic period.⁸¹

Babylon, like several other Mesopotamian cities, was a centre for early science with advanced mathematical calculations and long-term astronomical observations centuries before the systematisation by the Greeks. Documentation libraries with cuneiform texts dealing with such matters have been excavated. Both international and local trade activities are documented in several archives found in the houses of businessmen in Babylon. The remains of shops and workspaces along streets have been unearthed in residential areas in the city. A reworking of the archaeological and textual materials from Babylon could provide interesting new information about the range of crafts practised.⁸²

Babylon is an example of a great city, which is the main political centre of an empire. The population, basically Babylonian but with numerous other ethnic and linguistic identities attested, had tried to adjust itself to the requirements of the landscapes within the possibilities offered as the main centre of the largest contemporary empire controlling vast surrounding regions. Nebuchadnezzar rebuilt Babylon with great monumentality at a time when it was the largest walled city in the world. The use of glazed, baked, and unbaked bricks but seldom stone for the buildings is an elementary example of the adjustment to the resources in the area. The interaction between the city and the surrounding landscapes, both

78 George 1992.

79 Pedersén 2005a, 2005b.

80 Wunsch 2000.

81 Koldewey 1990, 99–107; Krischen 1956; Finkel 1988, 38–58.

82 Pedersén 2005a, and forthcoming.

nearby and farther away, has to be studied in more detail, and a main question is why the city was finally abandoned. Was it because of political or environmental reasons, or a combination? Did the landscape no longer support such a city, or did a changed political situation no longer support the large-scale interaction of city and landscape?

Babylon, southern Mesopotamia, and even the whole of the Ancient Near East should also be seen as part of integrated systems. This is important in order to utilize the long historical information in a larger perspective. Several pioneering attempts have been made, but much has still to be done. M. Van de Mierop has used historical system models in order to study the Mesopotamian city in historical perspectives.⁸³ A. Yoffee and G. Algaze have used anthropological and archaeological system building in interesting ways in order to reach new and important general insights.⁸⁴ The world system theory of C. Chase-Dunn has not yet lived up to a well-founded empirical basis for the area, but can be promising in the future.⁸⁵ The resilience theory of C. L. Redman has already shown interesting general possibilities when not used in an overly simplistic way.⁸⁶ There is much more that should be done here with system building in order to understand the long historical development of city life in the Ancient Near East and relate it to a world perspective. There will probably never be a single theory explaining all aspects of city life, but a multiplicity of theories can be of help in interpreting the data in larger perspectives. In order to achieve well-balanced results in a larger perspective, there is also a need to perfect the material basis with further genuine surveys, GIS analysis, archaeological excavations, as well as intense study and interpretation of the huge amount of ancient texts.

Concluding perspectives

This short survey has shown some aspects of socio-environmental interactions underpinning urbanism in the part of the world with the longest urban development, that is, the old city cultures in the Ancient Near East and Egypt c. 5000–100 BC. The Ancient Near East was the place for the oldest farming cultures with the first villages, the first towns, and the first cities, and here we have the longest recorded history of city life. Some aspects of the large perspective of the whole of the Ancient Near East have been dealt with briefly.

When comparing climate data from different approaches for the same area, it is important that they have the same historical date. We have assumed that currently available dates are useable. Here much more work has to be done, and important changes can occur. Data will certainly be refined and data from more sites will be possible to use. An apparent weak point is the currently nonexistent climate proxy data from southern Mesopotamia itself, limiting our present work. The relation between climate change and history will probably be far better known in the coming years.

The landscapes in the Ancient Near East over the course of thousands of years consisted of cities, towns, and villages in relation with each other and with surrounding agricultural landscapes, often in a greater regional or international net-

83 Van de Mierop 1997.

84 Yoffee 2005, 2009; Algaze 2008.

85 E.g. Chase-Dunn *et al.* 2006.

86 Redman & Kinzig 2003; Redman 2005.

work. The urban sites could be found along rivers and canals which provided the necessary water for the urban population, and which, especially in Mesopotamia and Egypt, made possible the irrigation needed to sustain the lives of the inhabitants. The first large cities were developed out of the towns during the 4th millennium BC, with Uruk as the first known quite large city. The following period, c. 3000–100 BC, has been examined in greater detail. This is especially the case for southern Mesopotamia and the city of Babylon, for which more details have been supplied for the reign of Nebuchadnezzar II around 600 BC.

A town wall for protection and separation often surrounded towns and cities. In some periods or areas, walls may not yet have been discovered or may have been limited to protective outposts and not to the central country area. The urban structures are often the result of uncontrolled growth or only limited planning, but clear planning may exist for specific sections, like town walls, main streets, and monumental buildings. Examples of more completely planned towns include, for example, military or workers' towns in Egypt and Mesopotamia of limited sizes.

During the millennia considered here, we have a number of partly contemporaneous, partly successive large cities in the Ancient Near East and Egypt, but many more small and medium sized towns. Babylon was one of the largest cities and around 600 BC the main one, with 800 ha contained inside the walls. This city has been used for some more detailed examinations in order to show the potential for more detailed research in the future. Much more work can be done on existing ancient texts concerning the city, the size, the function of different sections of the city, and the surrounding area.

In central or prominent places, towns and cities had monumental buildings consisting of temples for the gods and palaces for the kings, as well as living areas of quite different social qualities. All this shows a social and intellectual stratification for which there is not only archaeological evidence but also a large number of references in ancient texts. There is a great need of surveys and geomagnetic examinations of some of the largest cities, and especially of Babylon and its surroundings. Only in this way can the town plan be properly established both inside and outside the town walls.

We have looked at the interaction of towns and cities with the surrounding landscapes and with areas farther away as well as with other cities. Gardens and green areas surrounded the urban structures outside the walls, but were also found inside the town walls in some places, either planned for royal or temple gardens, or left as areas for possible future building expansion but used in the meantime as green lands. The extent and function of these areas have to be studied in greater detail. The preferred places to live were often in the city, where also the large landowners disposing of the surrounding agricultural landscape had their residences. The relation to the surroundings was necessary in order to provide food and basic raw materials. Changed political circumstances may have caused interruption of the long-distance boat transport of food to Babylon, leading to further stagnation of that city in later periods.

We have considered the inhabitants of towns and cities, their organization, ideas and languages, their relation to the immediate surroundings and to other urban entities. In some towns and especially in main cities, there were ethnic and linguistic minorities to some extent. The resulting mixture of peoples and languages in large cities has to be studied with greater care. The estimations of population as well as similar statistics always have a special interest for the gen-

eral public, but so far the estimations are based on rather weak comparisons with later material. This aspect is worth deeper and more careful examination.

The early cities in the Ancient Near East are the oldest in the world. The location along rivers and canals as well as the size and form of urban structures is of interest for deeper understanding. Some of the cities have continuous occupation from ancient times until today, but most, and in fact (almost) all, in southern Mesopotamia were abandoned after a shorter or longer period of time and the population moved to other, nearby sites. The reasons for these relocations have to be studied in greater detail. Can the abandonment be explained by changes in the river courses, destruction of the soil, or other reasons?

Climate and environmental changes caused the cities to use the existing resources in new ways and to adjust to the altered situation. There were continual adaptations until the changes were so drastic that individual sites and entire areas had to be abandoned by the inhabitants. A few examples, such as southernmost Mesopotamia around 1700–1400 BC, have been given, but many details have to be clarified before the question can in any way be regarded as settled.

We have also attempted to do the opposite, that is, to see the possible influences of ancient urban structures and urban landscapes on environment and perhaps even climate, such as salinization, vegetation reduction, and problematic water management. We have also made a preliminary attempt to point to a possible study of longer-term conclusions on cycles of development and decline of urban complexes on local and sub-regional scales.

We have attempted to move towards an understanding of the cognitive and ideological aspects of society reflected in the special form of towns and cities. However, a deeper understanding of the principles of the “urban mind”, governing or influencing the spatial organization of towns and cities, is a much larger question and outside the ability of this programmatic phase of the project.

For future research, two preliminary working tools have been developed during this preliminary phase. They are the freely downloadable ANE.kmz-place-marks giving Google Earth identifications of Ancient Near Eastern sites, and the preliminary digital model of Babylon.

Much more work has to be done before any of the discussed long-term perspectives of historical city life in the environmental landscape context can be properly understood.

Finally, there is a need for a new form of synthesis based on a proper methodological re-evaluation of the increasing number of more exact climate proxy data, archaeological surveys and excavations, and based on comparisons with the huge amount of ancient texts with often detailed relevant information which still await proper evaluation.

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5. Social and Environmental Dynamics in Bronze and Iron Age Greece

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ABSTRACT

The authors present an overview of cultural and social resilience during more than two thousand years of fluctuating environmental circumstances in the Greek Bronze and Iron Ages. Central for discussions are four case studies focusing on discontinuities during periods of heightened societal stress combined with suggested climatic or environmental instability.

Topics under discussion are how past environmental changes and cultural responses interact. Attempts to reconstruct human sustainability in the light of shifting environmental circumstances should aim to establish a firm sequence of events. Other important factors are discrepancies and inadequacies of environmental and archaeological datasets in the Aegean, and intra-regional variation where small-scale environmental changes have affected even neighbouring valley systems in different ways. Human decision-making and agency have been continually underestimated and under-explored, and the actual outcome of events after episodes or processes of environmental change lies in how they were perceived and dealt with by the people affected. All four case studies contain discussions on societal complexity, whether waxing or waning, and overexploitation with resulting degradation of lands is a factor for three of the four case studies. A significant change around 2200 and 1100 BCE is the disappearance on a supra-regional scale of common features in material culture, and the shift to regionalism and small-scale life, while a reverse development can be seen around 1600 BCE and 700 BCE.



Plate 1. The prehistoric settlement on the hillock of Mastos in the centre of the Berbati valley, east of Mycenae. Photo by Michael Lindblom.

Introduction

This chapter outlines perspectives on landscapes and people in the making, and the persistence of urban minds during the Greek Bronze and Iron Ages. An overview of cultural and social resilience during more than two thousand years of fluctuating environmental circumstances adds value to discussions of the discontinuities over time and the work of urban minds during periods of heightened societal and environmental stress. In order to discuss long-term developments in parallel with more short-term events in a limited space, four case studies from different intervals during 3000–600 BCE are singled out. Common to all is that they include periods of marked societal change combined with suggested climatic or environmental instability. The case studies cover two centuries each:¹

1. The Early Bronze Age: 2300–2100 BCE – the end of the time of economic and societal growth characterizing much of the period in the Aegean.
2. The Late Bronze Age: 1700–1500 BCE – the rise of the Mycenaean culture on the Greek mainland.
3. The Late Bronze Age: 1200–1000 BCE – the demise of the Mycenaean culture on the Greek mainland.
4. The Iron Age: 800–600 BCE – the rise of the city-states (*poleis*) and the era of colonisation in the Mediterranean.

Liveable landscapes

Most of the landscapes of Greece are topographically diverse even within short distances. Distinct regions are naturally formed and demarcated by mountain ridges and the sea. It follows that environmental prerequisites may vary distin-

¹ The four authors possess specialist knowledge of their respective research responsibilities, including relevant academic research as well as archaeological field work and knowledge of the Greek landscapes of today.

ctly over quite short distances, creating micro-regions and micro-climates.² Many regions and their environments are also naturally defined by streams transecting and compartmentalising valley floors. This diversity of the Greek landscape is important for understanding life during the Bronze and Iron Ages as well as the archaeological and historical archives through which we approach it. It is likely that a village in its topographical setting constituted a large extent of the lived-in world for most people and constituted the limits for day-to-day movements in the landscape (*Plate 1*). Elevations and water lines were natural and visually distinct geographical delimiters. As such they were meaningful components in the construction of local and regional identities and urban minds. Archaeological and historical records display a mix of shifting and overlapping identities as traditions developed on local, regional and supra-regional scales of their times. The presence of a regional and a supra-regional backdrop for life, however, makes clear that life on a local level was complemented by social interactions that could take place over great distances, through the movements of locals beyond their home regions, the welcoming of travellers, and probably a complex web of social networks for the movement of goods and ideas.

The natural and cultural compartmentalisation of the Greek landscape was thus an important source for a variation in the development of socio-environmental interactions over time. Natural prerequisites such as elevation, slope, soil, access to water and other environmental forcing factors in combination with topographical definition of regions, as well as variation in the strength of local and regional identities, resulted in different, although sometimes closely linked,

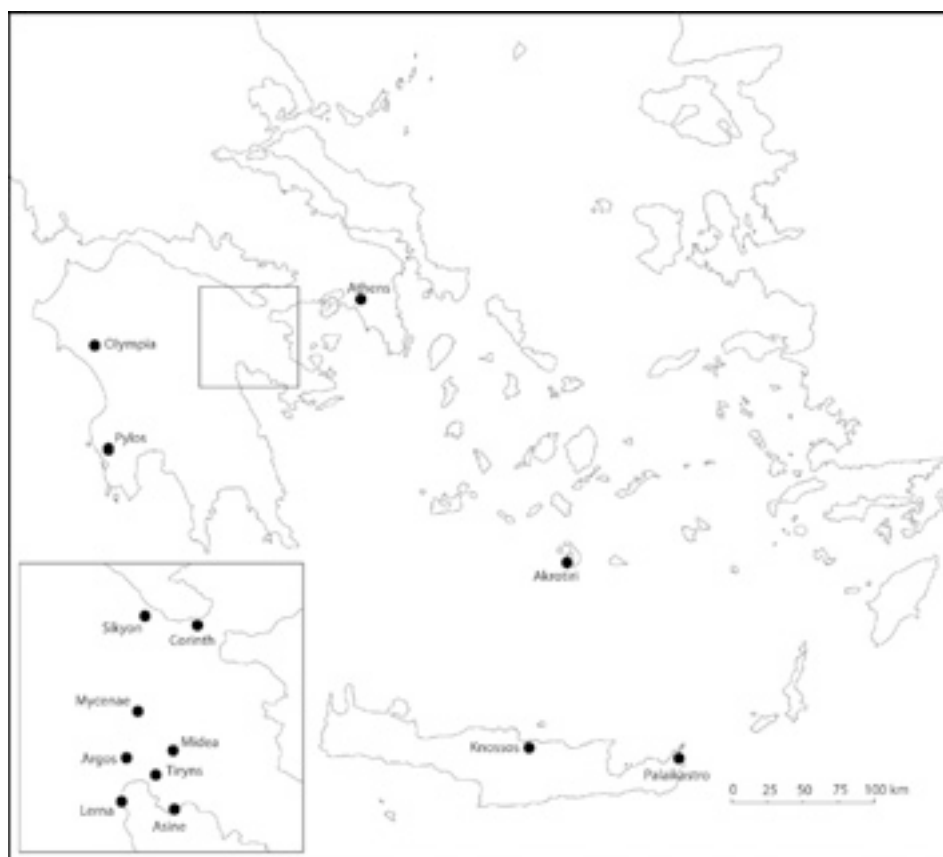


Fig. 1. Map of the Aegean area with Bronze and Iron Age places mentioned in the text. The inserted box represents the main study area.

2 Tzedakis *et al.* 2004.

cultural-historical trajectories. The four case studies presented below were selected from the archaeological and historical records of the Greek mainland, with emphasis on the north-eastern Peloponnese and the approximate region of the modern districts of the Argolid and Corinthia (*Fig. 1*). Together with the neighbouring districts of Attica and Boeotia to the north, the north-eastern Peloponnese constitutes the best studied area during the Bronze and Iron Ages (c. 3000–600 BCE). It is also the area that has attracted most attention in the form of archaeological survey projects (non-invasive walk-throughs of landscapes registering ancient surface finds). Carried out over small or large regions, these surveys give overviews of human presence, most often from a wide diachronic perspective and with emphasis on site distribution and regional development.³ There is thus a large body of data available for studies of settlement patterns, economy and societal development within a limited geographical area-conditions not easily found elsewhere on the Greek mainland.

The size of topographically distinct regions in the area varies. In all, the prefectures of Argolid and Corinthia cover an area of some 4,500 km² (Argolid 2,154 km² and Corinthia 2,290 km² which combined constitute 3.4 % of Greece) with a large percentage being mountainous regions. The largest area of flat land is the coastal Argive Plain with an extent of approximately 250 km². The plain, which draws water from an extensive area of small inland valley systems and mountainous regions covering some 1,200 km², was a cultural and social focal point throughout the Bronze and Iron Ages. Inland valleys tend to be considerably smaller, ranging from 25 to 80 km² (e.g. the Berbati, Nemea, Xerokampos and Phlious valleys).⁴

Prehistoric life

Small regions tended to have one central settlement, often established in the Early Bronze Age and settled throughout much of the Bronze Age with fluctuating levels of activity. Not surprisingly, however, on the Argive Plain there was room for more than one of these central locations, and at least two major settlements seem to have been in place at most times throughout prehistory. In all regions hierarchies of settlements developed over time, with a mix of major settlement(s), small villages and many isolated farmsteads. These were visually, socially and economically interconnected, although the intensity and exact forms of exchange varied over time and often elude us today. It nevertheless stands clear that the workings of adjacent areas were always important and that there were numerous interactions between regions. Geographically, these neighbouring areas were never far away, with natural passes connecting the often mountainously enclosed regions. Routes of movement were established as soon as there were settlements to be connected; only the technical level and the number and density of monuments changed over time. The distances within our focus area were never long. In fact the major settlements were often located in direct connection to the natural passes and situated at rather equal distances from each other. Around ten kilometres or just below seems to have been the preferred distance, corresponding to what would have been a return day journey on foot through most landscapes.

3 See Rutter 2001, 97–105, 148f. for a review of survey projects up to 2000.

4 Phlious data: Casselmann *et al.* 2004, 18.

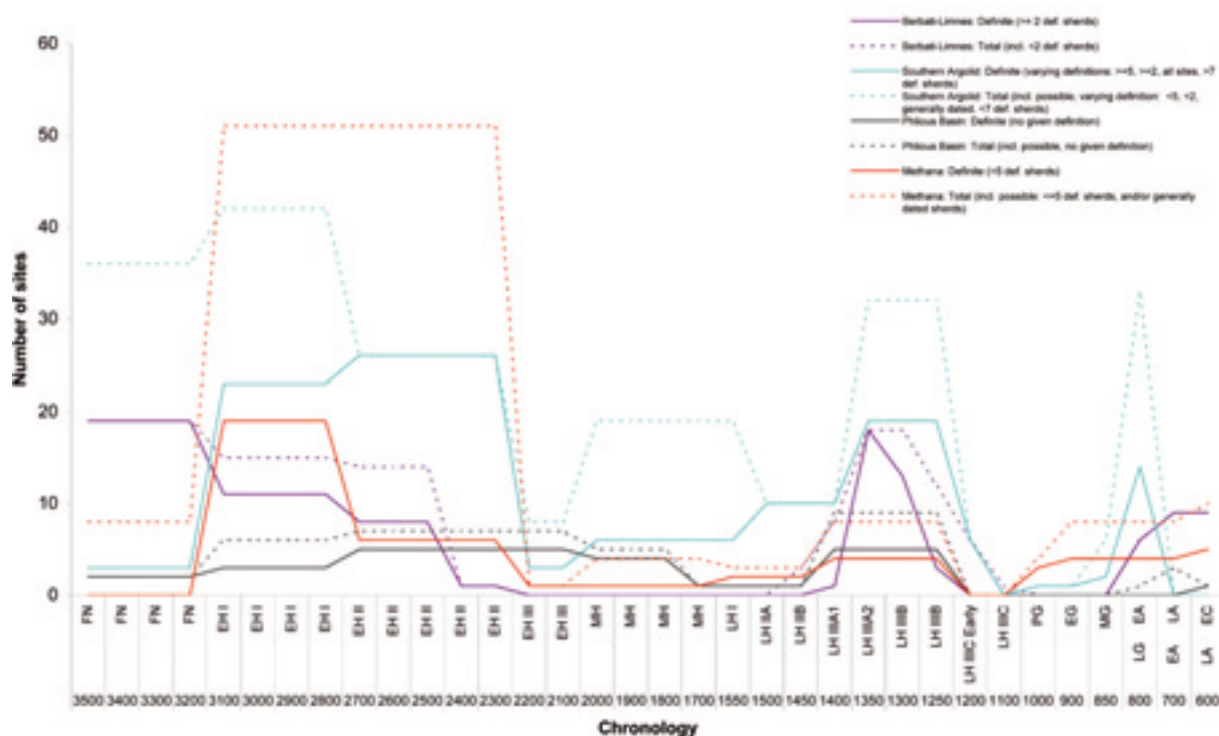


Fig. 2. Combined number of sites documented in four archaeological field surveys in the main study area (data from Wells and Runnels 1996; Mee and Forbes 1997; Runnels et al. 1995; Casselmann et al. 2004).

The picture offered by the combined information of available survey results (Fig. 2), is one of considerable fluctuations in terms of site number and distribution in the landscape over time. This picture is supported by the results of excavations and our knowledge of the material culture in general. Thus, the middle of the Early Bronze Age on the Greek mainland saw the emergence of a flourishing society, evidenced by a booming economy, monumental buildings and fortifications, economic administration, craft specialization, and communities acting as hubs in extensive trade networks. This development was reversed during the last centuries of the 3rd millennium BCE and replaced by a society with fewer and smaller settlements, few interregional contacts and economic recession. Four hundred years later, during the beginning of the Late Bronze Age, the area again saw a period of economic growth which climaxed in the Mycenaean civilization, a complex society with marked hierarchical order centred around palaces and communities heavily reliant on the exchange of goods. At the end of the second millennium came yet another ‘collapse’, and the society of mainland Greece went into a period often referred to as ‘the Dark Ages’, during which the hierarchical palatial state was replaced with the more diversely governed city-state (*polis*). The *polis* offered an arena where different political and economic interests as well as a new articulation of social and religious values were played out. These dynamic qualities overcame environmental stress and population growth, resulting in the spread of the *polis* model in at least two waves of colonisation and with the founding of new cities across the Mediterranean. In sum, the four periods can be characterized as two periods of societal downturn and contraction, and two periods of regeneration and societal expansion. This is an assumption largely grounded in the shifting distribution in time and space of settlements and material culture indicative of economy and degree of societal complexity.

Many theories have been launched to explain these apparent fluctuations in societal formation and organisation. While some scholars have favoured natural disasters, migrations, soil degradation or erosion as the roots for political and economic breakdown, others have pointed out that most of them may equally well be the result rather than the cause of the turmoil. Periods of decreased precipitation, affecting large parts of the Eastern Mediterranean in the 22nd and 13th century BCE, have also been suggested. All these causal explanations can be found among the top possible contributing factors to general societal 'collapse' listed by Jared Diamond in his latest and much debated study,⁵ which only goes to show that interpretations presented in relation to the Greek Bronze Age are in no way unique. In answer to Diamond and others suggesting environmental degradation as the major factor to societal collapse, Joseph Tainter has pointed out that the views of modern scholars and ancient people may deviate significantly. What we call 'degradation' may only represent a change of opportunities for others.⁶ Human perception and decision making (cognition) are thus at the heart of resilience and sustainability even when strong forcing factors (climatic and environmental) are present.

The Urban Mind project seeks to integrate datasets from historical ecology with cognitive interpretative models. As Todd Whitelaw noted in 2000, few studies so far have succeeded in combining the two and are therefore left on a descriptive rather than an interpretative level. His call for a more explicit and fine-tuned integration of environmental and archaeological investigations into Aegean prehistory still remains largely unanswered.⁷ The present chapter is intended as a step in this direction. Concepts such as 'urbanity' and 'social complexity' stress even further the need to acknowledge cognition more actively. The 'urban mind' will be a concept that incorporates the environment and at the same time, in a sense, excludes it by its transformation into the cultural, restraining possible negative effects that climate and environment fluctuations may have, or may have the potential to have, on human life. The four case studies singled out are presented in chronological order below, highlighting different aspects of socio-environmental interactions and the varying strategies chosen in the face of environmental and climatic change.

2300–2100 BCE. The decline of the Early Bronze Age societies

The period 2300–2100 BCE on the Greek mainland includes what has been interpreted as the zenith of a thousand-year-long cultural expansion phase as well as the beginning of a period of socio-economic recession lasting more than five hundred years.⁸ The transition is distinct in terms of material culture. It meant the end of monumental building complexes, extensive use of seals for admi-

⁵ Diamond 2005, 11–15. Reviewed e.g. by Tainter (2008).

⁶ Tainter 2006a, 92f.

⁷ Whitelaw 2000.

⁸ The period encompasses the transition between the second and the third of the three periods within the relative chronology of the Early Bronze Age on the Greek Mainland (thus Early Helladic II–Early Helladic III). For more on the Early Helladic period, see e.g. Pullen 1985; Forsén 1992; Weiberg 2007.

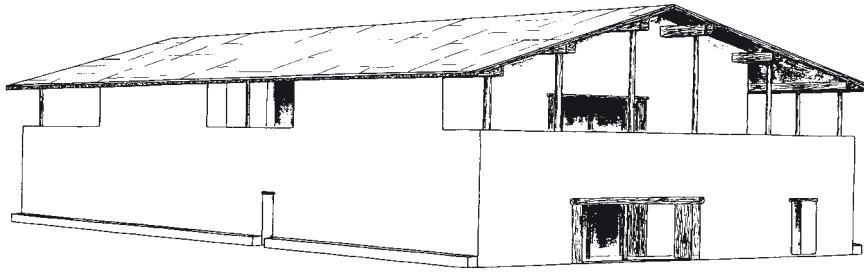


Fig. 3. Reconstruction of the monumental corridor house at Lerna in the Argolid c. 2400 BCE (after Shaw 1987, fig. 5). Courtesy of the Archaeological Institute of America /American Journal of Archaeology.

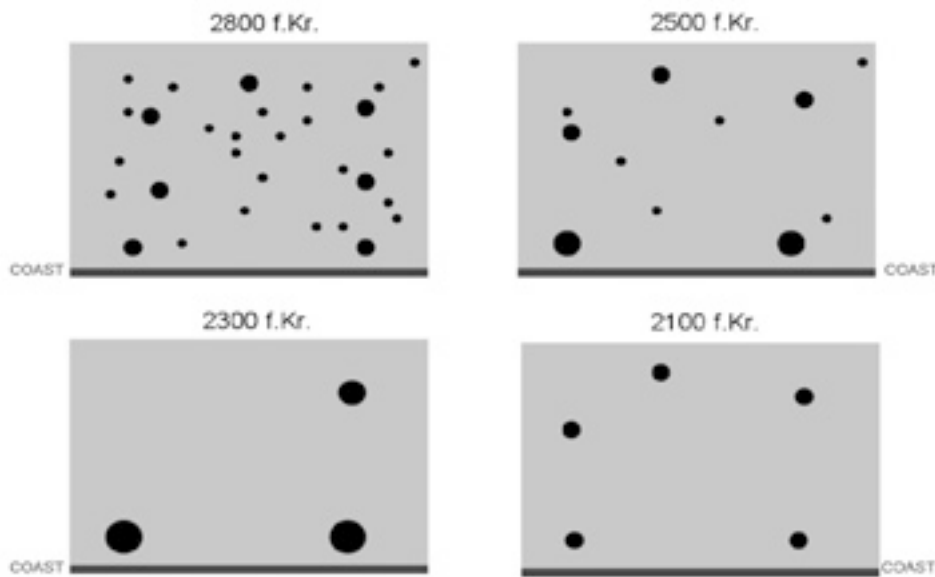


Fig. 4. Schematic representation of different stages in the Early Helladic settlement pattern on the Argive Plain and surrounding regions.

nistrative and economic purposes, and a discontinuation of a *koiné* in material culture that had existed for centuries in large parts of the northern Peloponnese and central Greece. On an architectural level the disappearance of monumental houses known as corridor houses is apparent (Fig. 3). These complexes are usually considered to be important features in the definition of the Early Bronze Age mainland, as well as pinnacles of architectural achievements of the latter half of the period.⁹ The disappearance of this economically and administratively important type of building in many ways defines the cultural transformation around 2200 BCE. There are several independent indications of a society shifting from some sort of common organisation and administration, and from supra-regional concordances in material culture including a rather complex level of craft specialisation and advanced technical skills within a wide sphere of interaction, to more or less the opposite – seemingly all at the turn of a century. In terms of settlement

⁹ On corridor buildings, see e.g. Shaw 1987; Nilsson 2004; Weiberg 2007, 37–57.



Plate 2. View of the southern parts of the Argive Plain, encompassing the locations of both Tiryns and Lerna, on opposite sides of the Argolic Gulf. Photo by Erika Weiberg.

distribution, a number of communities suffered destruction by fire around this time and their number and size decreased and changed drastically.¹⁰

The history of the north-eastern Peloponnese can be traced through four stages of socio-environmental changes during the 3rd millennium BCE, interchanging periods of dispersal and nucleation (*Fig. 4*). The first stage is the peopling of the landscape beginning in the final stages of the preceding Neolithic period and culminating during the first half of the 3rd millennium. This stage is followed at around the middle of the millennium by a withdrawal from many farmsteads and small villages dotting the landscape, with the population instead converging in one centre within each topographically distinct region. It is especially striking under these circumstances that many of the locations chosen were also topographically distinct, with residential areas located on or around hillocks or mounds elevated above the valley floors, making them visual eye catchers in their local surroundings (*Plate 1*). The second stage is one of societal delineation on a regional level, marked above all by architectural activities and elaboration at the central locations. In fact, what is most pronouncedly expressed in the Early Bronze Age archaeological record is that the physical manifestations of the villages took on new proportions around 2500 BCE. At about this time the lasting mark of human presence in the landscape gradually became more and more pronounced. The locations that became centres in this nucleation would remain so in their respective regions throughout the Bronze Age, with few and short interruptions in occupation. One period of interrupted habitation, however, is the apparent abandonment of some of these locations during the third stage, in favour of a few intra-regional and coastal centres where the development from the preceding stage is continued and refined until around 2200 BCE. The southern focus for this development was the Argive Plain, and more specifically its two major

¹⁰ On the physical manifestations of the transition and the theories related to it, see Forsén 1992; Maran 1998.

centres – Lerna and Tiryns (*Plate 2*).¹¹ One can thereafter argue for a fourth stage, encompassing roughly the last two centuries of the third millennium BCE, when there are signs of reoccupation in inland valleys, indicating that the hold on the coastal regions had loosened.¹²

The critical period in this scenario is the local nucleation phase in the second stage around 2500 BCE. This development set the scene for the following three hundred years, leading up to the events around 2200 BCE. It was around 2500 BCE that the patterns of the past – patterns of dispersed habitation that developed during the last phases of the Neolithic period – were first disrupted. This reflects a clear change in the lifestyle of the Argive inhabitants, suggesting changes not only in how and where they lived, but also in how they made their living and in the framework of values governing social life. Nucleation of settlements without a decrease in population is evidenced from this period and should be seen as the physical manifestation of an ongoing urbanisation process. A likely trigger is a growing receptiveness for the distinctions of different topographical and social regions and an identification process involving both the landscape itself and other people that inhabit it, evolving through the preceding phase of settlement dispersal into the greater landscape. A second likely trigger is the increasingly internationalised spirit of the mid-third millennium BCE. Many supra-regional correspondences and the visibility of new features in material culture suggest widely different influences and growing cultural values connected to long-distance travel and the products of long-distance trade networks over land and sea. A process of urbanisation and the forging of identities on both the regional and the local level is clearly, however, not a smooth continuation. There are a number of dents in the time line indicating rather fundamental changes in lifestyle for people in the Argolid. There would have been options, and also probably a majority choice in relation to these options at various points along the time line, especially around 3000, 2500, 2300 and 2200 BCE. The fact that the number of years between these turning points diminishes over time is probably a sign that the development accelerated from the mid-third millennium and that the first incentive to break a pattern of dispersed settlements was of central importance. One consequence of this choice was complex environmental conditions in certain parts of the area in question. Extensive erosion episodes are evidenced from the coastal region with an onset around the same time as the first nucleation within each region.¹³ It is likely that erosion was accelerated by the convergence of a larger number of people to central coastal locations, leading to increased pressure on the slopes of the surrounding mountains, which at this point in time were used for cultivation and grazing on a more intensive scale. The erosion episode can therefore be characterised as a relatively short-term effect of a change in settlement pattern and administration in a society at its socio-economic peak, including an at least partially centralised agricultural system, with increased woodland clearance and an overall intensified exploitation of the lands.¹⁴

11 To the north along the coastline of the Corinthian Gulf, the settlement history is much less well known, but it seems likely that there were local centres also in this area that paralleled some of the activity at Lerna and Tiryns.

12 E.g. Wright *et al.* 1990, 628 (the settlement of Tsoungiza).

13 Early Bronze Age erosional episodes are recorded on the Argive Plain (Zangger 1993), Asine (Zangger 1994b), and Southern Argolid Survey locations (van Andel, Runnels & Pope 1986).

14 Contra earlier research which sees erosion as the cumulative effect of a long-term and unchanged system of widespread farming (e.g. van Andel, Runnels and Pope 1986, 113) it is argued that erosion was an unlikely cause of the depopulation of the landscape but a result thereof. Heightened

No climate sequences are available from central or southern Greece, but on the basis of the present knowledge, climatic factors seem of little or no direct importance for these local events on the Argive Plain. On a large regional level (i.e. the Eastern Mediterranean basin), as outlined by Martin Finné and Karin Holmgren¹⁵, many records indicate that a generally drier climate, compared to the early Holocene, had been established around 3000 BCE. They further emphasise that there are no strong indications for climate events centred on 2200 BCE. Only in the easternmost parts are there some records indicating short lived phases of substantially increased aridity around this point in time, which have also been used to explain socio-cultural upheavals in those regions.¹⁶ Much more relevant for the present discussion, however, is the sub-regional inter-variability resulting in a climatic zoning for the approximate period c. 2450–2050 BCE, e.g. suggesting wetter conditions over northern Greece.¹⁷ At this time, therefore, it seems clear that Near Eastern climate records cannot be used to directly explain any contemporaneous historical events in the north-eastern Peloponnese.¹⁸ The three records closest to central mainland Greece and the focus area indicate either a relatively cooler (southern Adriatic Sea) or a wetter (northern Greece and northern Aegean Sea) climate during the critical time period around 2200 BCE. This rather diverse and scanty evidence may clearly have been factors in the environmental as well as cultural developments in the second half of the Early Bronze Age on the Greek mainland, but any conclusion to this effect would need much further consideration and localised data of high resolution. Long-term as well as short-term climatic changes are likely to affect ecosystems, causing at times the crossing of ecological thresholds and resulting in changes in vegetation, which may in turn have led to erosion and other possibly problematic environmental conditions. If, for example, the Argive Plain saw wetter conditions after 2500 BCE as indicated by the northern Greek records, this may very well have worked to accelerate the erosion and sedimentation on the plain. With our present knowledge, however, the probability of human activity as the main forcing factor in relation to deforestation and erosion seems to weigh heavier.

The social and cultural reorganisations of the Early Helladic society around 2200 BCE bear nevertheless much resemblance to developments further east. One reason for this is likely to be found in the changes during the 3rd millennium in key agents within the pan-Aegean interaction zone, which for the EBA can be seen as a three-tiered development.¹⁹ The centuries leading up to 2200 BCE, corresponding to the zenith of cultural achievements on the mainland, are fore-

deforestation is evidenced from 2500 BCE from a pollen core from the former Lake Lerna on the Argive Plain (Jahns 1993, 197). Phases of deforestation are otherwise more common in the 5th and 4th millennia BCE, following the first expansion into the landscape in various areas, suggesting that the Argive pollen core reflects special and localized conditions. Cf. Maran 1998, esp. 450–457. Erosion may in the centralised case be caused by careless clearing or shortened fallow in times of prosperity (van Andel, Runnels & Pope 1986, 113–117, 125f.). As accelerated sedimentation is only recorded from coastal areas, the impact of the maximum transgression seems to gain further significance, and a likely secondary trigger is therefore the non-human effects of the rise of the eustatic sea-level, cited by Zangger (1993, 83) as one possible factor in the mid-Holocene erosion events, alongside the climatic optimum of the post-glacial, and the changes in land use techniques.

15 Finné & Holmgren, this volume.

16 For overviews, see: deMenocal *et al.* 2001; Staubwasser & Weiss 2006.

17 The full results of the collection of climate series data, and attempted reanalysis based on fluctuations in proxy record in relations to their average value during the last six thousand years, from the eastern Mediterranean is presented by Finné & Holmgren, this volume.

18 Contra Maran 1998, 452; Fuchs 2007.

19 Maran 1998, 432–457; Broodbank 2000, 287–319.

most characterised by an Anatolian element. It materialised in the wake of the increased demand for tin and gold, metals that the core area of the Aegean contact zone during the first half of the 3rd millennium, the Cycladic islands, could not supply. New eastern influences also meant the spread of new techniques such as the fast wheel for pottery manufacture, an increasing popularity of Anatolian drinking customs, and probably also an influence on aspects of architecture and administration. This corresponds in time with a development towards an increasingly complex society on the Greek mainland, something that is especially evident in the higher level of material indicators and the emergence of local and even regional centres approaching 2200 BCE. Some of the driving factors for this development can surely be found within a problem-solving spiral leading to a more complex and increasingly unstable and expensive social structure and to destabilised socio-political structures.²⁰ Further, this development may well have meant that, along with the economic system, the basis for the Argive identity became increasingly frail and possibly vulnerable to any disruptions of traditional patterns. There is much to suggest that, during the 3rd millennium, the high-order life in our focus area had become increasingly centred on a set of social and cultural values connected to a specific type of economy and material culture – where interregional contacts and their products played a symbolically important role – which could lead to problems in upholding this identity and social cohesion if the bases for these values failed. Therefore, a breakdown in the contact networks in the Near Eastern inlands may very well have had consequences far beyond the core area and contributed to upset the social balance even on the Greek mainland. Faced with the new circumstances created around 2200 BCE by a combination of many internal and external factors, the choices made by the Argives led to the abandonment of the then current level, or type, of complexity and ultimately to cultural and social reorganisation.

Many communities in the Aegean area followed similar socio-cultural trajectories as did the ones in the north-eastern Peloponnese. Some, however, did not, and studies of Aegean Early Bronze Age history that do not consider the roles of other similar and adjacent contact zones will therefore not result in a full picture.²¹ Thus, when the activities in most settlements on the Greek mainland and in the Cycladic islands faltered, other regions prospered and life continued without major breaks into and through the last centuries of the 3rd millennium. One of these regions was Crete, which sailed forth (literally, with the first sailing ships in the Aegean) as the major factor within the pan-Aegean interaction zone during the last centuries of the 3rd millennium.²² The demise of cultural complexity at so many locations in the Aegean and Minor Asia thus did not mean the collapse of these networks, but rather a restructuring and even intensification, with new agents moving into more active positions.²³ These Aegean ‘success’ stories prove that different settlements, or rather the individuals within them, reacted in a variety of ways to the turbulence of the time. In the light of these diverging histories, it seems therefore all the more vital that the histories of each region are carefully contextualised, and that the time- and space-specific mixture of factors is sought in order to more fully understand the drivers of these histories. The full

20 As argued case-specifically by Joseph Maran (1998, esp. 450–457) based on the original work by Joseph Tainter (1988).

21 Maran 1998, esp. 433f, fig. 71A.

22 Maran 1998, esp. 443–450; Broodbank 2000, 325.

23 Maran 1998, 451f.

narrative up to this point and beyond was clearly much more complex than the possibility of partly climatically triggered disturbances within traditional trading circuits, and the outcome ultimately formed by the experiences and mentality of the people involved.

1700–1500 BCE. The rise of the Mycenaean civilization

Around 1630 BCE the central Aegean area in the Mediterranean was struck by an unparalleled natural disaster. A volcano on Santorini in the Cycladic Islands erupted, with devastating effects on the immediate surroundings. The following pages summarise the impact of this eruption, particularly on human communities in the NE Peloponnese on the Greek mainland some 200 kilometres to the north and north-west. Results from a multitude of scientific disciplines, coupled with different interpretative models and opinions, serve as sobering reminders of just how complicated it is to identify, let alone interpret, ancient environmental forcing events and their possible impacts on human societies. This particular case study was chosen partly to illustrate how unevenly a natural disaster can strike different areas at an approximately equal distance from its centre, but also to highlight the difficulty of correlating the extent and effects of environmental variability and human responses.

The Eastern Mediterranean is a highly volatile area and contains several volcanoes. In 1866 there was a minor eruption on Santorini. The event resulted in a French scientific expedition to the island to document its geology.²⁴ The exploration team discovered a significantly larger and pre-modern eruption which had buried a prehistoric town under tens of metres of pumice.²⁵ The archaeological finds suggested that the town should be dated to the Late Bronze Age during which a civilization had apparently existed on the island. In excavations on Crete, some 100 km to the south, archaeologists uncovered several large building complexes in different places on the island during the first decades of the 20th century. The most well-known example is the so-called Palace of Minos at Knossos, excavated by Arthur Evans. He concluded that there had been a flourishing civilization on Crete and that the finds, especially the works of art, were remarkably similar to the ones known from Santorini.

Evans and others had noted that almost all of the building complexes on Crete, today conveniently but probably erroneously labelled ‘palaces’, had been violently destroyed during the early part of the Late Bronze Age.²⁶ In a now famous article of 1939 Christos Doumas proposed that the eruption of the Santorini volcano had devastated the Minoan palaces on Crete. By doing so, Doumas initiated a debate that has continued unabated until today and continues to involve scholars from a range of scientific fields. The debate revolves around the extent and effects of the ‘Minoan’ volcanic eruption as well as its exact position in chronologi-

24 Fouqué 1866; 1867.

25 Fouqué 1869.

26 The relative chronological sequences and cultural spheres of Minoan Crete, the Cycladic Islands and the Helladic Mainland were established by the early 20th century, see Tsountas & Manatt 1897; Evans 1906; Wace & Blegen 1916–1918. The absolute chronology used here follows Manning 1995 and Manning *et al.* 2006.

cal and causal terms. The date of the event, both in relative and absolute terms, has received enormous scholarly attention. Not only did the eruption effectively bury towns and villages on Santorini under a thick blanket of pumice, but it also had a demonstrated impact in areas of neighbouring cultures on the Cycladic islands, Minoan Crete, the Helladic Greek mainland, Hittite Anatolia, Bronze Age Cyprus, the Levant and Pharaonic Egypt. A tsunami followed in the wake of the eruption. Volcanic ash landed in areas over 1000 km away and pumice drifted ashore along the coasts of Egypt and the Levant. This eruptive 'horizon' in the Eastern Mediterranean has foremost been studied in attempts to synchronize different regional chronologies.²⁷

There has been a fierce debate about the extent to which, if at all, the eruption and tsunami disrupted the environment and influenced the cultural trajectories of the peoples of the Eastern Mediterranean.²⁸ Many scholars claim that the impact of the eruption was considerable and resulted in widespread famine in areas outside the Aegean²⁹ and in global climate change,³⁰ but the claim remains unproven.³¹ Some scholars have even suggested that Plato's fourth century BCE allegorical narrative of the sunken city of Atlantis is a distorted echo of the Late Bronze Age eruption.³² Empirical data blend with fiction, opinions and different current research agendas in ways which are not easily digested by non-specialists. The simple truth is that the environmental impact is imperfectly understood despite enormous scholarly attention, especially in regions not immediately affected by heavy ash fall or the ensuing tsunami. The general methodological fault is that the net has often been cast too wide in the assessment of possible repercussions of the eruption. Instead of focusing on individual settlements or small geographical areas at regular intervals and in different directions from the disaster-stricken epicentre at Santorini, the resilience of entire civilizations in the Eastern Mediterranean has been assessed. This approach induces too many unknown variables in the working of large socio-economic structures in the past. The north-east Peloponnese of the Greek mainland held dozens of contemporaneous villages. What follows is a brief assessment of the direct or indirect effect that the eruption had on these communities.

The Minoan eruption was a natural event of very great magnitude. On the Volcanic Explosivity Index (VEI) it is ranked as 6.9 or 7.0 on a scale of 8.³³ Calculations of the volume of eruptive materials dislodged differ markedly from around 30 km³ up to 100 km³.³⁴ The mapping and geochemical attribution of tephra fall (i.e. fine-grained volcanic ash shards) in deep sea cores,³⁵ lake sediments,³⁶ and archaeological excavations³⁷ suggest that the wind was blowing in an easterly direction at the time, thus affecting mainly the Eastern Mediterranean. The erup-

27 E.g. Manning 1999. See also the large and interdisciplinary SCIEM 2000 project led by Manfred Bietak at <http://www.oeaw.ac.at/sciem2000/> (accessed on March 23rd 2009).

28 Driessen & MacDonald, 2000; Driessen, 2002; Bottema & Sarpaki 2003.

29 White & Humphreys 1994.

30 Baillie & Munro 1988; Kuniholm 1990; Kuniholm *et al.* 1996.

31 Cf. Eastwood *et al.* 2002; Manning & Sewell 2002.

32 Friedrich 2000, 147–160.

33 Simkin & Sjöberg 1994. E.g. products volume and eruption cloud height are used to establish the value.

34 Cf. Pyle 1990; McCoy & Dunn 2002; Sigurdsson *et al.* 2006.

35 Guichard *et al.* 1993; McCoy & Dunn 2002; Aksu *et al.* 2008.

36 Eastwood & Pearce 1998; Eastwood *et al.* 1999; Eastwood *et al.* 2002.

37 E.g. Bichler *et al.* 2006; Bruins *et al.* 2008.

tion also created a tsunami. There are several published models which seek to identify its possible mechanisms of generation and ultimate wave heights/crests in surrounding areas. Much like calculations of VEI and tephra fall, however, they reach different numbers.³⁸ The most recent study of computer-simulated scenarios shows that the tsunami propagation was almost exclusively confined to the south-eastern Aegean. There was an initial wave around Santorini of 15–35 metres amplitude and a crest length of about 15 kilometres. A separate study of the Minoan town of Palaikastro in north-east Crete suggests that waves of about nine metres in height hit the shoreline and that the town was completely inundated.³⁹ The damage to the infrastructure of the town, however, is difficult to assess and the number of human casualties is unknown. Interestingly, the Greek mainland seems to have been more or less unaffected by the tsunami. Similarly, while most of the ash fell in areas to the east, some wind-born tephra also landed over the Peloponnese but not to an extent that would have affected the agriculture or animal husbandry in a significant way.⁴⁰ It is likely that the two to three years following the eruption witnessed slightly lower temperatures than normal in this semi-arid landscape due to the blocking of incoming radiation from the sun. In high altitudes this probably resulted in some loss of crops, especially olives and grapes, while in more low-lying areas the same conditions spurred the growth of some plants.⁴¹

It is apparent that many communities on Minoan Crete, especially on its eastern side, entered a long period of disrupted exchange networks in the generations

Plate 3. View from the northeast of the prehistoric acropolis at Mycenae with the Argive Plain in the background. Photo by Erika Weiberg.



38 Cita & Aloisi 2000; McCoy & Heiken 2000; Cita Sironi & Rimoldi 2005; Dominey-Howes 2004; Minoura *et al.* 2000.

39 Bruins *et al.* 2008.

40 Tephra fragments from the Santorini eruption are known e.g. in an off-shore core from the Kiladha bay (Bottema 1992, 117–38) and at the settlement of Kolonna on Aegina in the Saronic Gulf (Bichler *et al.* 2006).

41 Cf. Pearson *et al.* 2009 for the rapid tree growth at Porsuk in Turkey in the years following the Minoan volcanic eruption.

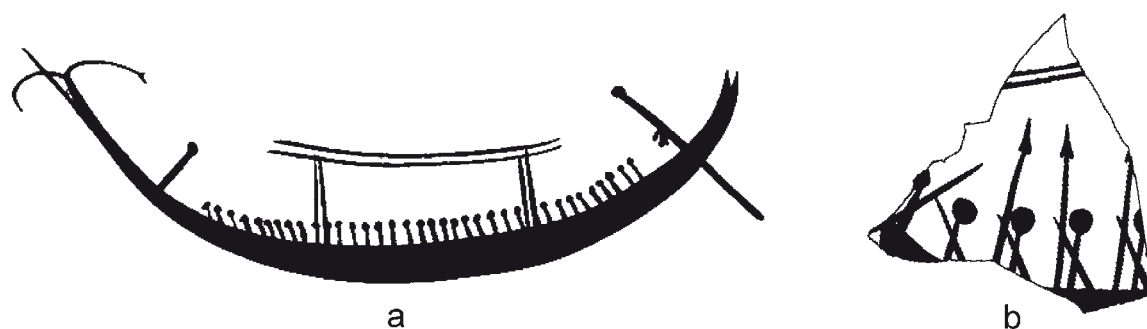


Fig. 5. Representations of ships (a–b) and armed men (b) on pottery from Kolonna, a prehistoric settlement on the island of Aegina off the coast of the northeast Peloponnese (after Siedentopf 1991, Plates 35, 38:162).

following the eruption.⁴² The harbours and the ships anchored along the north-east coast of Crete and in the south central Cycladic islands were either destroyed or heavily damaged in the hours after the eruption and tsunami. It is therefore highly likely that the immediate and apparently lasting effect of the Santorini eruption was a redirection of a southerly Minoan-Santorini trade route to a north Cycladic-north-east Peloponnesian. Social and economic turbulence culminated on Crete in the destruction and subsequent abandonment of several economic and political centres around 1500 BCE. At the same time, it is likewise apparent that the economic and social decline on Crete coincides with the appearance on the Greek mainland in 1650–1400 BCE of a ranked and highly complex society whose economy was based on an effective agriculture and husbandry and on intensive exchange with adjacent areas. The people of these communities are collectively known today as Mycenaeans after Heinrich Schliemann's excavations of one of their political centres in the north-east Peloponnese (*Plate 3*).

The Mycenaeans had a background as agriculturalists and pastoralists living in villages without any apparent internal social stratification. In the generations before the Santorini eruption they had been exposed to the customs of people living on the islands to the south. This encounter resulted in a rapid change in the social structure with an ideological articulation of rank and status among certain competing families or lineages. Initially this process was visibly manifested in the mortuary practices, with some graves lavishly furnished with valuables, weapons and imported goods. During the funerals, the rights and privileges of individuals in the emerging elites were renegotiated. Over the course of time, rank and political power would be cemented and hereditary, and also would be expressed in public architecture – in the palaces of Mycenae, Tiryns and Pylos – around 1400 BCE. These economic, political and religious centres were the pinnacles in an ideological super-structure which stressed inequalities in an otherwise largely rural and dispersed agricultural landscape.

From a paleoenvironmental and archaeological perspective the Santorini eruption had no discernible negative effects on the Mycenaeans in the Peloponnese. On the contrary, both the archaeological remains and, some three hundred years later, the historical documents (Linear B) suggest ever increasing social complexity, political centralisation and control,⁴³ as well as the continued expan-

42 Driessen & MacDonald 2000.

43 Shelmerdine 2001.

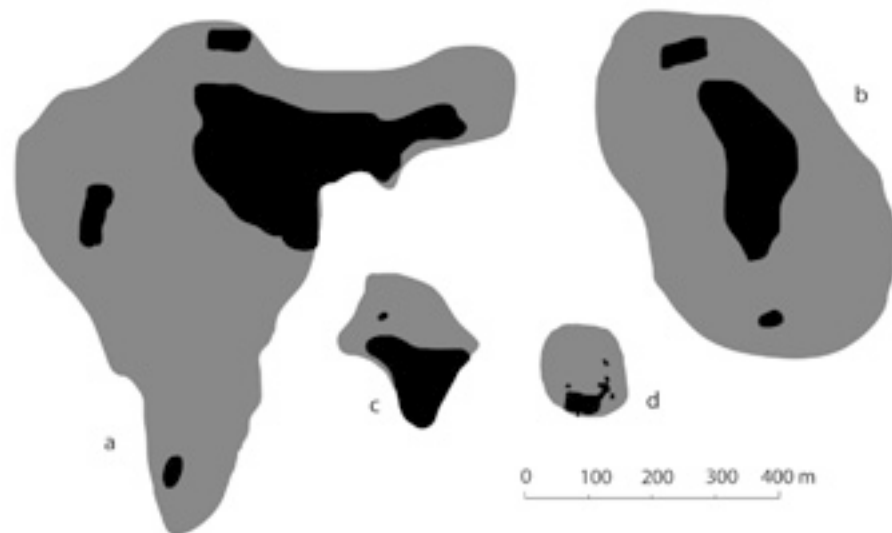


Fig. 6. Comparative view of excavated (black) and estimated (gray) areas of settlements at (a) Late Helladic IIIB Mycenae, (b) Tiryns, (c) Asine and (d) Early Helladic II Lerna.

sion of agriculture into previous marginal lands such as isolated valley systems and upland regions.⁴⁴ Emerging elites utilised the increasingly travelled northern exchange networks to convert part of this agricultural surplus into desired goods and valuables (*Fig. 5*).

In retrospect it appears that new ideas surrounding power and legitimacy in combination with a flourishing economy paved the way for what we recognise as the Mycenaean culture in the NE Peloponnese. Unevenly distributed stress following the Santorini eruption around 1630 BCE contributed to a shift in the balance of regional power in the Aegean. The demise of Minoan hegemony was accelerated by the eruption. Not only did the Mycenaean escape the worst effects of the disaster; they also took advantage of the vacuum in the exchange of goods previously dominated or even monopolized by the sea-going Minoans and islanders. Over time the human and physical landscape of the Mycenaean was imbued with political and economic connotations. Their palatial centres should not be seen as urban entities, but as physical manifestations of political and selected economic control in the hands of a few lineages. This system was perfected (or driven to excess?) around 1200 BCE when fundamental shifts in the cognitive and physical landscape took shape again.

⁴⁴ Maran 1995; Rutter 2001, 131f.; Hope Simpson & Dickinson 1979, *passim*.

1200–1000 BCE. The demise of the Mycenaean civilization

The 13th century BCE has long been regarded as the zenith of the Mycenaean culture. The century, roughly corresponding to what prehistorians refer to as the Late Helladic IIIB period, ends with the destruction of several political centres followed by pronounced regression. In the Mycenaean heartland, the Argolid, the ensuing period is typically interpreted as having smaller settlements, fewer contacts with the surrounding regions, and a lower level of economic activity. The archaeological material lacks several traits that we have come to associate with the complex administrative system previously seen in the region. Clay tablets written in the Linear B script, large-scale storage facilities and other expressions of centralised political power are no longer visible.

The lack of these expressions of a highly organised society during the end of the Late Bronze Age has been interpreted as reflections of a radical change in the social and economic structure around 1200 BCE. Recent research, however, suggests that changes need not have been as radical as previously thought. Archaeological remains at palatial centres such as Mycenae, Midea and Tiryns and the village at Asine show that these places did not immediately revert to irrelevance; rather, there is a not insignificant measure of continuity (*Fig. 6*). This includes the continued existence of networks of exchange extending outside the NE Peloponnese, a finding that is supported, for example, by chemical analysis of pottery from Argive sites.⁴⁵

All told, radical change is not as visible in the archaeological material as traditional accounts would lead us to believe. In the following, both old and new hypotheses concerning the destruction of the palatial society at the end of the mature Mycenaean period will be presented. Finally, the value of the concept ‘collapse’, presented earlier in this chapter, will be discussed as concerns the Argive Plain at the end of the Late Bronze Age.

The relative standing and position of ancient settlements on the Argive Plain have long attracted scholarly attention. Not only do they allow for a measured discussion on how ancient societies were organised more generally; they have also served as a frame of interpretation of exchange and settlement hierarchies.⁴⁶ The mature palatial period suggests the existence of a diversified and decentralised exchange pattern where Mycenae, Tiryns and Midea were the major exchange nodes of goods, while minor settlements functioned as distributors of goods exchanged at lower levels.⁴⁷ As noted earlier the period ends with destruction, c. 1200 BCE, and some settlements were not rebuilt to match their earlier status whereas at others life apparently continued. We may even find that some settlements prospered and expanded the settled area. As concerns the Argolid, there was a sharp decline in the use of tombs at all sites except for Asine, where it has been observed that earlier tombs were re-used. Several models of explanations are possible, such as that burial traditions had changed.

It has been said that the period following the destruction of the large settlements lacked the traits characteristic of the previous complex administrative system, such as Linear B tablets. The preceding period has also, if perhaps not

45 Mommsen *et al.* 1988; Mommsen & Maran 2000–2001.

46 Bintliff 1977; Dietz 1984; Kilian 1988a; Sjöberg 2004.

47 Sjöberg 2004.

for entirely warranted reasons, been associated with large-scale storage facilities, and the assumed lack of these in the period following the destruction has been regarded as a change in the economic structure. Be that as it may, changes need not have been as radical as previously proposed.

The theories concerning the decline of the Mycenaean world are many and varied, and here will be mentioned just a few pioneering works. Perhaps the most popular are the migration theory⁴⁸ and the drought theory.⁴⁹ Another theory focuses on system collapse based on internal factors. Decline may also have been caused by environmental degradation and/or climatic change such as droughts and plague but also earthquakes.⁵⁰ Other theories are shrinkage of arable land or socio-political and demographic factors,⁵¹ the innovation of iron working⁵² and changes in warfare.⁵³ Recent work has ensured that the invasion theory is still a potentially viable explanation. Thus, Eder argues that there was a short break between the end of the Bronze Age and the earliest Iron Age (the so-called Sub-Mycenaean period). In her opinion, the break with the Mycenaean burial tradition, the use of settlement areas for burials, and the changes in settlement pattern are evidence of the arrival of new groups of people.⁵⁴ The reasons for the decline need not, however, issue from an invasion of foreign groups of people. K. Kilian,⁵⁵ for instance, finds it more plausible that a succession of earthquakes hit the area during a longer period and had an adverse impact on the social and economic fabric of the area. The major impact of a simultaneous earthquake and flash flood was later questioned by Zangger, who pointed out a number of reservations such as chronological errors and insufficient published excavation data. Zangger does not rule out that a flash flood caused severe damage at Tiryns, but the evidence that the disasters hit simultaneously is in his opinion rather vague. Instead Zangger proposes that the flash flood could have occurred close to the dramatic Hekla 3 eruption in Iceland, an event that apparently caused climatic disturbance.⁵⁶ The long-term effects of the eruption, such as a volcanic dust veil, were observed already in earlier articles that discussed the possible impact on human society, such as bad harvest, poor pasture, and impeded communications.⁵⁷

The reservations concerning the impact of earthquakes have recently been revised by Nur and Cline, as they point to the fact that it is time to reconsider the general effects of earthquakes that hit the Eastern Mediterranean and the Aegean area in the late 13th and early 12th centuries BC. According to Nur and Cline these are notable mainly on account of being the last of a long series of disasters to strike the area covering the geological faults of the Aegean and the Eastern Mediterranean.⁵⁸ Another interesting factor is the impact of soil erosion and alleviation, as these were apparently not troublesome in Mycenaean times apart from locally. Effective soil management such as terracing seems the only

48 Vermeule 1964; Wahlberg 1976; Schachermeyr 1984; Deger-Jalkotzy 1977; 2003.

49 Carpenter 1968.

50 Angel 1972; Kilian 1980; Butzer 1996.

51 Betancourt 1976; de Fidio 1987.

52 Childe 1942.

53 Drews 1993.

54 Eder 1998.

55 Kilian 1988b.

56 Zangger 1994a, 209–210.

57 Baillie and Munro 1988, 346; Baker *et al.* 1995, 336.

58 Nur and Cline 2000, 61.

plausible explanation according to some scholars.⁵⁹ On the other hand the human disturbances on the Bronze Age landscape have been pointed out, for example woodland clearance.⁶⁰

Can societal collapse and climate change explain the changes observed at the end of the Bronze Age? Concerning the collapse of societies more generally, different theories have been developed in regard to, for example, the fall of the Maya culture, the Roman Empire and many others. One of the pioneering scholars who address the fall of complex societies in general is Tainter. In a recent article he discusses the difficulties in applying theories of collapse and also questions the suitability of some studies dealing with collapse.⁶¹ In another article, Tainter discusses overshoot and collapse in Bronze Age societies such as Mesopotamia, and he points out that proximate causes could not be based on the Malthusian overpopulation or mass consumption theory, but rather elite mismanagement and failure of information feedback.⁶² The works of Tainter indeed bring into focus the problems involved when discussing major changes in prehistory, and the best conclusion out of the presented cases is that we must ask whether the end of the Bronze Age, such as demonstrated in the archaeological findings from the Greece mainland, should be defined as a collapse as is done in several studies. Tainter defines collapse as “rapid loss of an established level of social, political and/or economic complexity”.⁶³ In a similar vein, a recent study by Diamond emphasises the need to apply, for example, climatic data with caution.⁶⁴ This is because the consequences of climate change can vary between regions, as has in fact been documented for mainland Greece.⁶⁵

As noted, earlier effects of earthquakes in the Late Bronze Age have been observed as a plausible rapid explanation for the events occurring in the Argive region. Due to the fact that the Bronze Age landscape already was disturbed by human impact, the earthquakes may have caused local and regional environmental disaster. For example, landslides and flash floods negatively affected the environment, causing soil erosion and perhaps the destruction of some settlements. The effects on the regional economy may therefore have been rather severe. Communication is essential when discussing the prosperity of a region, and it has been proposed that the road system in the Argolid was of importance not so much for warfare as for the regional economic development, as roads probably were necessary for the transportation of goods inland over short distances.⁶⁶ The network of roads seems, however, to have survived the disasters hitting the plain, and Argive settlements in use during the final period probably used the same roads as the inhabitants of the earlier palatial period.

Finally, is it necessary to apply the term ‘collapse’ to the final part of the Bronze Age as illustrated by material remains in the region of Argolid? Does the region show a rapid loss of an “established level of social, political and/or economic complexity”? The region may have been affected by several disasters emanating from earthquakes causing rapid but short-term environmental damage

59 van Andel *et al.* 1990.

60 Jahns 1993, 197.

61 Tainter 1988; 2008.

62 Tainter 2006b.

63 Tainter 2006b.

64 Diamond 2005.

65 Bintliff & Snodgrass 1985.

66 Jansen 2002.

such as erosion, flash floods etc. The environmental damage could have been more devastating for some of the previously flourishing settlements whereas others, such as Midea, Tiryns and Asine, flourished in the final period. The causes were, however, together strong enough to change the previous economic and political pattern of development on the Argive Plain. The status of settlements changed after the destruction of the old palaces, and the region was affected by socio-economic changes. However, although a short-term collapse may be registered we may also find that the society was resilient enough to survive these disasters.

What, then, triggered the problems that caused the Bronze Age to come to an end? It is possible that the final phase of the Bronze Age, such as observed in the Argolid, may have been affected by the Hekla 3 eruption in 1159 BCE. The spread of volcanic ash from the stratosphere may have contributed to bad harvest and poor pasturage, affecting the local and regional economy and the development of the region. It must be remembered that the Bronze Age society was a small-scale economy and even one bad harvest may have caused severe damage. Further, available climate records illustrate that the general long-term pattern is characterised by decreasing moisture and drier conditions. Regarding temperature changes, cold intervals are inferred about 1050 BCE and at 800 BCE.⁶⁷ The changes in temperature may have caused problems for the regional economy, until c. 800 BCE when an increase in olive cultivation is observed.⁶⁸

The intellectual efforts of the present 'Urban Mind' project have demonstrated that the climate characterising the end of the Bronze Age can not be defined as dramatic, even if the Hekla 3 eruption may have caused problems. Instead the processes should be characterised as long-term changes caused by changing environmental conditions that affected various parts of the Greek mainland in different ways. There are hypotheses that the survival of infrastructure and the continued development and maintenance of settlements such as Tiryns, Midea and Asine indicate the presence of a systematic cultural and social resilience in the final phase of the Late Bronze Age. The urban mind such as it was represented in the region of Argolid during the Late Bronze Age survived within the 'human mind' that was later re-established in Iron Age society.

800–600 BCE. The era of colonisation and the city-states

According to Aristotle (*Politics* 1.1.1), the term *polis* signified a political community but also an *asty*, i.e. an urban settlement as well as its hinterland, the *chora*. It has been argued that early poleis may have had their basis in the structure of the Mycenaean administration in the Late Bronze Age (1400–1200 BCE).⁶⁹ The following is a brief attempt to outline the development leading to the rise of the Greek city of the later Archaic-Classical period, starting with a climatic kick-start and ending with the Greek *polis*.

Owing to a high pressure over the Asian steppes in the north-east, a drier climate developed in the Aegean and eastern Greece during this period.⁷⁰ Prob-

67 Finné & Holmgren, this volume.

68 Jahns 1993, 197.

69 Hall 2007, 41, suggests that the term *polis* originally designated a stronghold.

70 Karin Holmberg & Martin Finné, this volume.

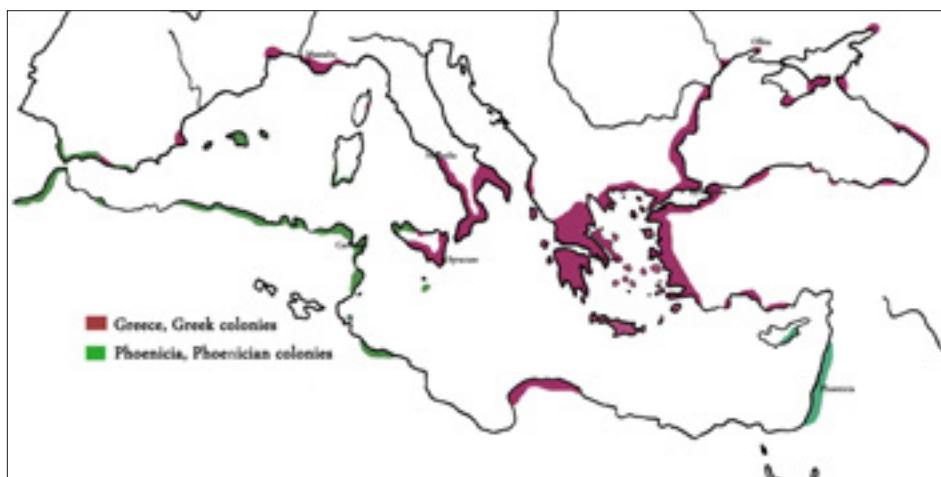


Fig. 7. Greek and Phoenician colonisation in the Mediterranean area.

ably more rain fell in western Greece due to prevailing winds, which gave better conditions for agriculture in this part of Greece. In the east, in rain shadow because of the mountain ranges in the Peloponnese and mainland Greece, the drier climate caused difficulties for those who cultivated on marginalized land on mountain slopes or land not fed by local water resources. Areas previously used for intensive cultivation would now be better used as grazing grounds, that is, as extensive land use. Less food would thus be produced, higher in protein content but with fewer carbohydrates. The result for the societies would be population stress, social unrest and rivalry between communities and between various groups within them.⁷¹

Groupings within the early Greek communities were based on lineages and families. The elite families displayed their lineage, its history and connections with the gods in the form of wealth based on land use, for example in rich graves and feasting. Elite goods in rich graves included weapons and armour, utensils for feasting and displays of pottery. In the new climatic situation, the strategy of the elite was to establish and consolidate their power and wealth through more extensive land use: grazing grounds for cattle as well as horses, and perhaps less intensive agriculture and hunting. The importance of cattle is best illustrated by the great amount of bovid votive figurines found at sanctuaries such as Olympia and by the significance of cattle and meat consumption in Homer's epics (*Iliad* 11: 680). Wars between neighbours may have been raids for animals, including horses, which were needed for elite display as seen in depictions in vase paintings, horse figurines and horse burials.⁷² Earlier cultivated land would have been needed for grazing and perhaps was even taken by force. (One might compare with the Highland clearances of the 1700s.)⁷³ With the 'new' land economy the competition for grazing grounds increased and would also have caused individuals from elite groups to feel the lack of land. The divide between the landowning elite and landless people became larger.⁷⁴

71 The literature concerning period is large, see Coldstream 2003, Snodgrass 2006 and Shapiro 2007 for further references.

72 Horse burials, e.g. Lefkandi: Popham, Calligas & Sackett 1993. Horses in Homer, e.g. *Iliad* 11: 680: the booty Nestor's raids included 150 chestnut horses, "all mares, and many of them had foals at the teat".

73 Richards 2000.

74 Loan slavery during the 7th century is reflected in the story of Solon's (c. 630–560 BCE) reforms in Athens, Block and Lardinois, eds. 2006.

Plate 4. Chariot, drawn by two horses on a Mycenaean krater from the 14th century BC, Museum Gustavianum, Uppsala (UAS 1557).



Other changes also affected the societies. The settlements began to take more organised forms during the 8th century, and they began to emerge as planned 'towns' around 700 BCE.⁷⁵ Metals, and especially iron, were more common by the end of the 8th century. Iron is in some respects a 'democratic' metal, more widely found and easier to work than the alloy bronze. More craftsmen would be engaged in metalworking in the settlements, under the eagle eye of, or as part of, elite families. With the growth of sanctuaries outside the settlements established in the 9th and 8th centuries BCE, new markets opened up as well as possibilities for the craftsmen, who did not necessarily have to confine themselves to working for only one group, chieftain or village.⁷⁶

In addition to this came the increased contact with other areas around the Mediterranean.⁷⁷ The Phoenicians' dominance of the sea was challenged during this period by Greek shipping, not least when colonisation started in the first half of the 8th century BCE. Ships loaded with people, probably mainly men, journeyed to western Asia Minor and the Black Sea, to southern Italy and Sicily,

⁷⁵ Smyrna (Bayrakli), by modern Izmir, usually called the first Greek town, was rebuilt around 700 acc. to a planned system and with a defensive wall. Hall 2007, 42.

⁷⁶ Risberg 1997; Nordquist 1997.

⁷⁷ For trade and contact, see Tardy 1997.



Fig. 8. Chariot, drawn by two horses on a vase from the 8th century BC. Drawing by Gullög Nordquist.

and to the French and Spanish coasts (Fig. 7). The reasons are much discussed.⁷⁸ One factor could be population stress caused by the new climatic regime and the consequences of the elite's economic strategy to occupy areas for grazing grounds. Most colonies are placed in areas that suggest that a quest for agricultural land was behind them, although access to metal, especially iron, also seems to have played a role.⁷⁹ Even if colonisation was often less organised than is usually stated in the handbooks, the divinely approved colonisation,⁸⁰ led by an official *oikist*, a leader from an elite family, opened up possibilities for the dispossessed and for younger sons to establish themselves as landowners and citizens with a new social identity and in a new settlement. These *apoikia* (literally 'home away from home') were established both on mainland Greece and in the Aegean islands, but those that usually come to mind are all the new settlements in south Italy, Sicily, North Africa and the Black Sea region.⁸¹

Communications between the Greek settlements increased as did the need for Greek-produced goods, giving rise to local production and trade. The new *poleis* were independent from their mother cities and were founded on new land in new areas; inhabitants had equal shares of land, and rights as citizens. Even if there were conflicts with the native population, over time intermarriages would also have occurred. The Greek identity was important: for the inhabitants of the new *poleis* ideas of what exactly established a Greek identity in culture, art, goods, philosophy and organisation must be expressed. The experience in organising space and building a functional urban system from scratch became important for the further development of cities in Greece proper.⁸²

Institutionalised cult space and sanctuaries outside the settlement frame and local elite control increased from the mid-8th century. Early records suggest that the large Panhellenic festivals originally were something for the elite for whom the display of prowess, athletic skill, and the beauty of its young men at, for example, Olympia (traditionally as of 776 BCE) was part of the ideological strategy (*kaloi k'agathoi* – 'the Good and Beautiful').⁸³ The festivals were occasions for

78 For colonisation, see Malkin 1998; Antonaccio 2007; Osborne 2009, 110–123. An earlier period of external movement at the end of the Bronze Age will not be discussed here.

79 As e.g. in the case of Pithekoussai on Ischia which may have had a population between 5000 and 10000. Osborne 2009, 106f.

80 For the role of the Apollo oracle at Delphi, see Antonaccio 2007; Neer 2007.

81 Osborne 2009, 112–118 for maps and a list of place names.

82 Hall 2007; Hansen 2006.

83 Neer 2007; Hägg ed. 1999; Hägg, Marinatos & Nordquist 1988. For athletics and elite, see Nicholson 2005.

both individual and communal display and gave opportunities for the communities to establish their identities on a Panhellenic scale as 'ethnic' groups.⁸⁴

Whatever the original function of the term *polis*, its name was that of its citizens, that is, a political community. The *polis* was called the Athenians, not Athens, the Corinthians, not Corinth, Lacedaemonians, not Sparta. In a very real sense, the organisation of citizens as *polites*, or citizens, came before the urban setting of them in a physical space, the *astu*, the city proper, even if we find the two terms used more or less synonymously, for example in Homer.⁸⁵ The festivals thus defined Greeks and/or citizens from the *poleis* with their settled centres and with their *polites* 'citizens' (some of whom may not have lived in an urban environment). At the end of the 8th century massive investments were made in the sanctuaries⁸⁶ which became arenas for the display of larger group identities: the ethnic groups and/or poleis, arenas for demonstrating family and group solidarity, ideology and a place for diplomatic meetings between rivals. At the same time, around 700 BCE, the display of the elite burials, directed towards a local level, tend to decline. The development corresponds to the development of the poleis as an idea and organisation, a physical space, and the development of citizenship.⁸⁷

The economic increase included increased specialization, more mobile craftsmen and specialists, and more markets. Even the sanctuaries were markets where large numbers of people congregated periodically. Together with the increasingly lively international trade network, the economic specialists, the craftsman and the traders could not only survive but also make a good living outside the local settlement. New social groups could emerge that were not fixed to the soil, and which, with increasing trade and the new invention of coins, could collect a mobile fortune. Trade and the marketplace, both physically and as a concept, became more important and stood outside elite control, since commerce was never an accepted aristocratic way of living. An aristocrat should be a landowner – this remained the ideal long after it had been outmoded in real life.⁸⁸

In the aristocratic ideology there was a reverence for the past as it was constructed and depicted in Homer and in figurative art, for example in the vase paintings: a *basileus*, 'king' in the centre of a group of male followers. Other trends in this nostalgia for the past are the rise of the *hero* cult, the return to ancient places such as Bronze Age graves,⁸⁹ and genealogies leading back to myths, as seen in the poems to elite winners of athletic contests, the so-called *epinikia* by among others Pindar.⁹⁰ The chariot races depicted in Mycenaean times from the 16th to the 13th century BCE are found again in the vase paintings of the 8th century (*Plate 4, Fig. 8*). They also are among the first and most prestigious events at Olympia and other Panhellenic games.

The backward-looking ideology and conservatism of large aristocratic groups, together with the social upheavals caused by the changing economy, led to social uprisings in the later 7th to 5th centuries, with the so-called tyrants,⁹¹ often members of aristocratic families who took power and based their rule on the

84 For a discussion on *polis* and *ethnos*, see Hall 2007, 49–59.

85 Polignac 1984; cf. Hall 2007, 41.

86 Early temples at Tegea (Nordquist 2002).

87 Morris 1989; Kamen 2007, 104.

88 Tandy 1997; Arnheim 1977.

89 For a discussion of the often problematic issue of tomb-cult, in this case in Messenia, see Alcock 2002, 146–152.

90 Antonaccio 1994; Hägg ed. 1999; Hägg ed. 1983.

91 Parker 2007.



Fig. 9. Map of the Aegean area of the period 900 to 500 BC with the sites mentioned in the text.

non-aristocratic members of the *poleis*. Here, as well, the warfare based on the infantry played an increasing role, and eventually this led to group training and solidarity.⁹² In this turbulent setting, the alphabet began to come into general use. Most famous is the work of Homer, but even laws and regulations could now be documented and thus were not solely in the power of the traditional elite – another significant area in which aristocratic prerogatives were being challenged.

Thus, the early *poleis* were from the beginning groups of people in small settlements that were centred on the families and their economy, the *oikoi*.⁹³ The groups included families of traditional landowners, elite as well as poorer citizens, craftsmen and slaves. As more and more people identified themselves and were identified by others as belonging to one of the increasingly larger communities, group identity became more important: to be a member, a citizen or of a citizen family, defined a person, and within the group of citizens one's place was decided by lineage, family connections, sex and age. Into this new amalgamation of people came ideas taken from external contacts and from social inventions. A new urban class developed, one that questioned the traditional balance of power in the *polis*.

An increase in population has been claimed from the ninth to the eighth century, at least in Attica and the Argolid, based on the increasing number of burials. It is, however, noticeable that there is also a change in the proportion between child and adult burials in Attica: in regard to the earlier part of the period up to the early 8th century, few child graves are found, but they increase dramatically in the second half of the 8th century.⁹⁴ This change in burial patterns may reflect

92 Krenz 2007, 79–80, suggests that organised common charge against an enemy is as late as at the Battle of Marathon, 490 BCE.

93 Zagora on Andros is estimated to have had 225–375 inhabitants during the 8th c. BCE, Hall 2007, 42.

94 Osborne 2009, 73f.

the congregation of people to central places, the emerging polis centres, as well as a general increase in population. A contributing factor may be the introduction of new forms of burials that are more easily recognizable in the archaeological record.

During the 8th century BCE the *poleis* system became established over large areas of Greece and occupied a physical space that is remarkably similar in all Greek cities, especially when the orthogonal town planning system came into common use. It is noticeable that the early cities (except for those on the Anatolian west coast) are found in eastern Greece, that is, in areas which would have been more affected by the dry and cold climate (Fig. 9). Still, there remained areas that may have been less affected by the climatic stress due to good water resources and where the *polis* as a city did not develop or else was very late, such as the western part of the interior and the southern Peloponnese.⁹⁵

The traditional cities on the Greek mainland usually grew out of older centres, as in the case of Argos and Corinth, or as a result of a conscious political decision to gather the population in one spot (*synoikismos*), as in the case of Athens according to tradition. But other old centres were not resettled, or remained minor communities. One example is Mycenae, the site of the Bronze Age citadel, where a small polis was established under the dominion of Argos, which retook the central role it had had at the end of the Middle and the start of the Late Bronze Age some hundred years earlier. In mainland Greece, as well, new *poleis* emerged as new settlements.⁹⁶

As the cities grew they needed new forms of government and organisation.⁹⁷ Urban life – i.e. social, religious and political activities – and society began to be concentrated to specific physical spaces, in towns and cities and to a certain extent also at the sanctuaries outside the cities. By the time the city as a physical entity with urban planning and large-scale architecture appeared, the *polis* as a community of people may have existed for a long time. We tend to draw conclusions from the end result of a long urban development, since little is known of the earliest phases of the Greek *poleis* because many sites continued to be settled and developed into cities. But it should be noted that the most important part of the city was always the open space, the *agora*, where people met and interacted,⁹⁸ as in the case of Smyrna, where an area just inside the town fortification was left open when the town was rebuilt with a more regular plan around 700 BCE.⁹⁹ As Alcock has suggested, it seems more realistic to see this growth of what would become big cities as a development, rather than a phenomenon linked to an ideal concept of a city.¹⁰⁰ The ideal of the city grew together with the city fabric.

The urban remains that are preserved are mainly those that for one reason or another had been abandoned. Places often mentioned are fortified sites in the Aegean islands, such as Zagora on Andros, or the Cretan settlement of Kavousi,¹⁰¹ as well as Nichoria in Messenia together with Lefkandi and Eretria on Euboea.

95 Morgan 2003.

96 The literature on Greek urbanism is vast, and here only a few titles will be given. See e.g. Martin 1983; de Polignac 1987; *Acts of the Copenhagen polis centre*, 1–5 (1993–2000); Alcock 2002; Morgan 2003; Hansen 2006, all with further references.

97 Hall 2007; Snodgrass 1971, 2006; Damgard Andersen *et al.* 1997; Shapiro 2007; Martin 1983.

98 Hall 2007, 46–48.

99 Nicholls 1958–9.

100 For a discussion, see Alcock 2002, 48f.

101 Alcock 2002, 49f. esp. n. 224 (on p. 237 for further references). For Crete, Nowicki 2000. For Zagora, see Cambitoglou *et al.* 1988. For Kavousi, see Gesell, Day and Coulson 1995.



Plate 5. The main road leading in to Athens, the Dromos, along which the state burials were placed from the Archaic period onwards. Remains of such are visible on the right hand side (the left hand side of the remains unexcavated). Photo by Gullög Nordquist.

Leaving aside these places, we will concentrate on the example of Lathuresa in Attica, a settlement on top of a rocky hill that was established in the late 8th century. Delimited by a boulder wall approximately 200 m long, the settlement consisted of several house complexes with altogether some 24 rooms in houses of various shapes and sizes, both rounded and rectilinear. One of them, apparently planned as a unit, seems to have had a more central function. Even if its inhabitants may have numbered less than a hundred,¹⁰² Lathuresa shows some features that are also found in the Classical Greek cities, such as an open area and close to it a one-roomed building identified as a small temple; that is, the settlement had an open place where people could congregate for social, political and religious reasons and meet their neighbours; it had a temple area, later if possible on an acropolis. But the small hill-top was hardly suitable for the growth of a larger settlement, and the activities seem to have ceased at the beginning of the 5th century BCE.¹⁰³

No graves were found at Lathuresa. This also illustrates a development towards a more structured urban milieu. When the town space became defined, the dead were given their final resting places outside the city border, which became in a sense both a physical and a conceptual border between the city of the living, where the activities of the *polis* were conducted, and the places of the dead citizens. The burials were situated along the roads leading into town, where they attested not only to the family status of the dead but also to the power, status and history of the city itself. The city carried parts of its history in the burials leading into the centre¹⁰⁴ (Plate 5).

The urban centre developed rather late, and the development was not the same in all Greek areas. In some regions, such as the Cycladic islands, the number

102 Lauter 1985 suggested a population of approx. 80–100 persons.

103 Lauter 1985. Other sites that often are brought forward are Nichoria in Messenia (Rapp, Aschenbrenner & McDonald 1983) as well as Lefkandi (Popham, Sackett & Thenelis 1980 and Popham, Calligas & Sackett 1993) and Eretria on Euboea (Mazarakis Ainian 1987). See also Mazarakis Ainian 1997.

104 Osborne 2009, 76–82.

Plate 6. Remains of one of the predecessors to the Parthenon on the Acropolis of Athens, in front of the Erechtheion. Photo by Gullög Nordquist.



Plate 7. The drain on the agora of Athens. Photo by Gullög Nordquist.

of settlements in the countryside decreased, while in other regions, such as southern Argolid, the settlements increased and also seemed to include a site hierarchy. It is also worth noting that even if many countryside settlements were abandoned they seem to have attracted, as did Lathuresa, cult activities for some time after-



Plate 8. Corinthian vase, in an orientalising style with animal motif, 600–575 BC. Museum Gustavianum, Uppsala (UAS 820). Photo by Ludmila Werkström.

wards.¹⁰⁵ The same is true, for example, of Asine in the Argolid, which according to the ancient historians was deserted during the wars between Argos and Sparta around 700 BCE. Here archaeological finds show that some activity, including a temple on the Barbouna hill, took place for centuries to come, until the place was finally resettled in the Hellenistic period (3rd century BCE).¹⁰⁶

The continuation, c. 600–500 BCE

The first monumental stone buildings erected after the Bronze Age were in the cities and in the sanctuaries around 600 BCE and were of religious character, such as the large stone temple of Apollon at Corinth with its magnificent monolithic columns. On the acropolis at Athens likewise a number of structures were built around this time or shortly thereafter, such as the old temple to Athena Polias, the Athena of the *polis*, which was a predecessor to the Parthenon from the second half of the 6th century BCE during the time of the rule of the Peisistratides¹⁰⁷ (Plate 6). Peisistratos was one of the so-called tyrants,¹⁰⁸ dictators from the aristocracy that had taken power, often with the support of the ‘ordinary citizens’ in opposition to the traditional and conservative landowning aristocracy. These rulers needed the support of the population of the *polis* and invested in structures that benefited them, such as fountain houses leading water into the centre, and

¹⁰⁵ Osborne 2009, 188–190.

¹⁰⁶ Frödin & Persson 1938.

¹⁰⁷ The early building history of the temples on the Acropolis is much discussed. Several pieces of sculptural work from large-scale temples in the Archaic period have been found on the Acropolis, now in the New Acropolis Museum, Athens, for example remains of a pediment depicting lions devouring a bull, or the so-called Blue-beard pediment.

¹⁰⁸ The term ‘tyrant’, *tyrannos*, in this period should perhaps best be translated with the modern ‘dictator’. It was men, usually from the aristocracy, who took power in the emerging *poleis* with the support of non-elite citizens. Their rule usually was relatively short-lived and in no case lasted more than three generations.



Plate 9. Model of the Athenian Agora during the 5th century BCE. The earliest public buildings were built along the hill on which the temple to Hephaistos was erected. Courtesy of the American School of Classical Studies at Athens: Agora excavations.

temples demonstrating their piety. One such example is the drain in the agora of Athens, also established during Peisistratos' rule (*Plate 7*).

This was also a period of economic change, when commerce flourished and the production of trade goods was directed towards the new, Greek cities outside Greece proper as well as other areas of the Mediterranean. As an example may be mentioned the production of the typical Corinthian pottery, with its light fabric decorated with friezes of fantastic animals, human and mythological figures, and decorative elements in dark red, black and white, inspired by contacts with cultures in the Eastern Mediterranean and spread by the networks of the Phoenician traders, whose ships reached most harbours of the sea. Vessels of this so-called orientalizing style were widely exported and inspired potters in other areas in their choice of colour and decoration (*Plate 8*). The development strengthened the producers, the traders, and those who invested in the 'new' economy settled in the urban centres.

However, the space for monumental architecture par excellence became the Panhellenic sanctuaries, that is, sanctuaries that attracted visitors from all over the Greek world. In these sanctuaries the first stone temples were built around 600 BCE, sometimes replacing earlier wooden structures, as in the case of the temple of Hera at Olympia. Likewise at Delphi, the temple from the 4th century BC, of which we see the ruins today, replaced a destroyed temple from the 6th century, which in its turn was built on the remains of a temple dating from the 7th century. The sanctuaries were the obvious places to demonstrate piety as well as richness, power and status for individuals but also for the *poleis*. Small and large votive offerings were given to the gods. One special type of votive offering was the treasuries, built to house the most important donations of a city to the god. Access to them was restricted, and those allowed to enter were selected visitors and the administrators who oversaw the operations of these buildings. The people of the island of Siphnos built their treasury at Delphi around 530 BCE.¹⁰⁹ Herodotos (3.57) tells us that, "*the Siphnians were at this time very prosperous and the richest of the islanders, because of the gold and silver mines on the island. They*

109 For a short description with pictures, see Andrea Hendrix, Coastal Carolina University, http://www.coastal.edu/ashes2art/delphi2/sanctuary/siphnian_treasury.html



Plate 10. One of the boundary stones of the agora at Athens with the text "I am the boundary stone of the Agora". Photo by Gullög Nordquist.

were so wealthy that the treasure dedicated by them at Delphi, which is as rich as any there, was made from a tenth of their income; and they divided among themselves each year's income."¹¹⁰ The Siphnians demonstrated their richness at home by using Parian marble for public monuments, and at Delphi by erecting the first religious structure built entirely of marble, with rich decorations that include statues of girls (*karyatids*) carrying the pediment as well as a frieze that depicts some of the myths that became common on later religious buildings: the hero Herakles, the congregation of gods, scenes from the Trojan War, and the battle between gods and giants, the *gigantomachy*.¹¹¹

Thus, during this so-called Archaic period, 7th–6th centuries BCE, the typical Greek architecture was established. The temple and its proportions, the order of columns and the decorative elements, and the illustrated mythology are found all over the Greek area, showing how close the cultural connections were and attesting to the idea of a Panhellenic identity. This is best seen in the sanctuaries, with the erection of all the monuments by the *poleis* as well as by rich private citizens, not only to the main god but to other gods as well as heroes that cohabited with the main protector of the sanctuary. The builders also included wealthy colonies in Magna Graeca, the Hellenized south Italy and Sicily. The sanctuaries became arenas where wealth and status could be displayed, whether by a city or a private person. Polyzeus, a tyrant of the Greek city of Gela in Sicily, erected a magnificent bronze monument as a tribute to Apollo for helping him win the chariot race in 474 BCE. It consisted of the sculpture of a charioteer in his chariot, at least four horses and two grooms, all more than life-size.

¹¹⁰ English translation by A.D. Godley. Cambridge. Harvard University Press. 1920.

¹¹¹ Such treasuries continued to be built later; for example the treasury of the Argives, also at Delphi, dates to 380 BC.

Again, one can mention the odes of Pindar and other poets to victors of the games in the sanctuaries, many of them aristocrats from the Greek cities of Sicily and southern Italy. These odes namely show a common cultural identity and ideology found all over the Greek world. The tales of the Trojan War, the mythology in the so-called Homeric hymns, the work of the lyric poets such as Sappho, Alkaios and Archilochos, and the first theatrical performances established literary genres and use of the language and dialects that set the scene for cultural activity of the coming centuries. The poets also established an individual, unheroic and un-mythological sphere that dealt with human emotions and passion, where a person's attitudes and feelings did not necessarily correspond to what was publicly approved in society.¹¹²

Early Athens seems to have consisted of a series of building concentrations or villages with open land in between. In the Athenian self-history the foundation of the city, that is the move of population to one centre (*synoikismos*), was ascribed to the legendary king and hero Theseus. Excavations have shown that in Athens the burials in the later city centre, the agora, had ceased by the 7th century BCE, which then seems to mark the period when this was seen as the town area.¹¹³ As mentioned earlier, it was during the reign of the *tyrannnos* Peisistratos that the first public structures, such as a fountain house and a drain that continued in use all through antiquity, were established, which suggests that some areas during this period were transferred to public from private use. A public space was created for the use of the public affairs of the *polis* and its citizens, and with that there developed a greater divide between public and private.

The fall of the Peistratides by 508 BCE and the change to a democratic political system meant that other types of structures were needed by the *polis*, such as places for the law courts, the magistrates and the council. They were placed along one edge of what was to become the *agora* (Plate 9). It was now also marked out by boundary stones, and the space of the *agora* was thus protected by both religious and profane rules (Plate 10). The same seems to have happened in other Greek *poleis*, in Argos and Corinth, for example. The agora became the important centre of any Greek town, essential for political and religious meetings as well as everyday life, trade and communication, and for social interaction between the citizens. In that sense it was seen, at least by the Greeks themselves, as something that set them apart from their eastern neighbours. Herodotos (1.153) lets the Persian king Cyrus say, "*I have never feared men who have a place set apart in the middle of their city where they lie and deceive each other. If I keep my health, the Hellenes will have their own sufferings to worry about, not those of the Ionians.*" For, as Herodotos comments, "*the Persians themselves do not use agoras, nor do they have any*".

The other essential part of the city was the religious centre, if possible placed in a high place that also served as a fortress and refuge. The Acropolis of Athens is perhaps the prime example. At Corinth the lofty peak of Acrocorinth served the same function, but sanctuaries were also placed on its lower slope. During the later part of the Archaic period, up to the beginning of the Persian Wars in 490 BCE, people of wealth and status invested not only in large burial monuments, *stelai*, with reliefs and/or painted decoration, but also in rich gifts to the gods. Statues of young girls, *korai*, always clothed, as well as naked, athletic, young men,

112 Osborne 2009, 216–220.

113 The place of the earliest agora is much debated. Some scholars would like to place it on the slopes of the Acropolis. For the finds and the development of the agora, see the web site of the Athenian agora excavations, <http://www.agathe.gr/>.



Plate 11. The temple to the Olympian Zeus at Athens with the Acropolis in the background. Photo by Gullög Nordquist.

kouroi, were put up in the sanctuaries together with various other votive offerings of value.

As mentioned earlier, the tyrants of the Archaic periods, such as Periander in Corinth and Peisistratos in Athens, initiated ambitious monumental building programs, erecting temples and other cult installations, such as one of the predecessors of the Parthenon in Athens. Such impressive monuments later became foci for other rulers, and their building history and functions reflect the changes in the socio-political landscape of the time. One case is that of the enormous temple to Olympian Zeus in Athens, started by the grandson of the tyrant Peisistratos, another Peisistratos in 515 BCE, and planned to become a large limestone building in Doric style with twenty columns on the long side and eight on the short side (Plate 11). However, only the podium, measuring more than 110 x 43 m, was finished at that time. When the tyrant family was deposed in 509/508 work stopped – the new democracy found little pleasure in a monument glorifying the hated Peisistratides. In the face of the Persian Wars at the beginning of the 5th century, parts of the finished stonework were used to build the city wall. And after the wars it was the Acropolis, as central to the *polis* and its ideals, which attracted the planners and builders of democratic Athens. The monuments destroyed by the Persian invasion were used to extend the building area on the Acropolis, their remains dumped into clefts in the rock, the so-called *Perserschutt*. But in the 4th century BCE the monarchic rule was back and another monarch, the Greek king of Syria Antiochos IV, saw a possibility to enhance his name by completing the old building project of the tyrants. He financed a new start with the Roman architect Cossutius, but now in marble and in the modern Corinthian style. Later under Roman rule, Augustus added his bit and finally the temple could be inaugurated in 131/132 by the emperor Hadrian after a building

history of over 600 years – longer than most houses stand. And inside it, Zeus, the original owner of the temple, now had company. Hadrian himself was put beside the Olympian god as a co-god.¹¹⁴

After the wars and with the introduction of democracy, the way to attain status and power was to spend freely for the common good in the *polis*, in water fountains, buildings, temples as well as theatre performances, or to invest in military equipment. Donors could be honoured by the council by means of honorary inscriptions, or by being allowed to erect monuments of their victories in, for instance, drama. In Athens such so-called choragic monuments lined the streets leading to the theatre, eternal monuments to the status of the donor. Their generosity and status became permanently visible to all citizens for all history.

Around 600 BCE and on, public buildings and monuments began to be built more often in stone, preferably marble, whereas private dwellings were usually simple, plastered, mud-brick structures with stone foundations, with a yard which contained, perhaps, a shady tree, vines or herbs, and which may also have housed chickens or, at least temporarily, a lamb brought in from the countryside to be used as sacrifice and food. One of the houses in the complex may have been two storeys high. Because of their simple construction, such buildings have been little explored within the limits of the modern cities; they often have been destroyed by later building activity.¹¹⁵

Around the city was the countryside, *chora*, which was also part of the *polis*. Here were the farm houses; some of them were owned by families living mainly in the *asty*, the city, and were run by relatives and or slaves, while other farms belonged to citizens settled in villages around the main centre. Even the villages were organised as communities, with magistrates, their own religious calendar etc, but they were still part of the *poleis*. How many there were and how they were organised would have differed since the *poleis* varied greatly in size, from Athens which in fact included the whole of Attica and a population counted in six figures, to small places such as Pallantion in Arcadia which may have counted its inhabitants in hundreds.¹¹⁶

One of the consequences of the establishment of urbanised centres was the need for produce to reach the markets in these centres to feed the city population. Certain agricultural produce became important cash-crops in the wider commercial networks, such as wine and olive oil. But as seen above in the case of Siphnos, there were other economic activities besides agriculture that were important for several *poleis*, such as mining, quarrying, metal production, production of leather goods and textiles, as well as trade, to mention a few. All this meant increasing communication and transport of goods by sea and land and ever increasing trade networks.

114 It fell into disuse by the 5th century CE. In 1852 a storm felled one of its surviving 16 columns.

115 One example of the small classical city is Olynthos in northern Greece, destroyed by Philip II of Macedon in 348 BCE. The Classical city that replaced an earlier settlement had a regular plan with city blocks originally consisting of ten ground plots each with more or less identical houses, in two storeys around a paved yard. Over time some families clearly acquired part of their neighbours' houses. These rather simple urban buildings may be compared to the large suburban villas with their mosaics, among the earliest in Greece. For an overview of the houses at Olynthos, see Nicholas Cahill, *Household and City Organization at Olynthos*, <http://www.stoa.org/hopper/toc.jsp?doc=Stoa:text:2003.01.0003>

116 For further discussion, see Susanne Carlsson, this volume.

Another important change was the emergence of infantry warfare during the Archaic period. Weapons such as swords and daggers may be found in earlier graves, but it is by the middle of the 8th century that bronze helmets and body armour begin to appear in elite graves and in vase paintings. Such items would have been expensive and were treasured loot from vanquished enemies, suitable to set up as offerings to the gods. At the early stadium at Olympia, wooden stakes with the panoply of armour and weapons marked such victories, making Olympia the prime example of military victory display. The round hoplite shield, so well depicted on the so-called Chigi-jug from around 675 BCE, was held securely on the left arm, enabling groups of soldiers to fight as a unit, something that also necessitated training of the hoplites, the infantry soldier.¹¹⁷ These more modern fighting tactics may not have made the earlier cavalry obsolete – in fact it did remain – but the modern warfare started to require more coherent leadership, training of personnel and new strategic thinking.

Thus, from around the mid-700s to 500 BCE the Greek world changed, from small-scale villages with ruling aristocracies and regional contacts, to an international world with urbanised centres and a social and urban organisation of growing complexity, with a network of sanctuaries, with coinage and writing, and far-reaching communications. An important part of that process was the reflections of the early philosophers on the nature of the world and its inhabitants, an activity that began in Ionia, the Greek coast of Anatolia.

Stresses and responses

Mike Baillie has called attention to what he calls a ‘suck-in-and-smear’ effect in efforts to describe past environmental changes and cultural responses. Precisely dated events, like environmental stress as deduced from tree-ring sequences, tend to ‘suck in’ roughly contemporaneous but poorly dated cultural phenomena observed in archaeological materials from surrounding areas; the temptation to see a causal connection simply cannot be resisted by many scholars. At the same time, an abrupt climatic event dated by scientific methods with a much wider margin of error is ‘smeared’ with the risk that it may be linked to cultural ‘responses’ which could even have occurred before the event in question.¹¹⁸ This implies that all attempts to reconstruct human sustainability in the light of shifting environmental circumstances must strive to establish a firm sequence of events. Their dates in relative and absolute terms become important.

Todd Whitelaw addresses the problem of discrepancies and inadequacies of different datasets (environmental and archaeological) in studies of the prehistoric Aegean.¹¹⁹ He also turns the attention to intra-regional variation and relatively small-scale environmental changes due to a range of factors likely to have affected even neighbouring valley systems in different ways, a possibility that is masked by the conflation of datasets with different resolutions and reliability. The synchronization of processes and the correlation between different datasets (climate, environment and settlements) are more often assumed than demonstrated. This is a generalization, he argues, that will allow “little scope for the possibilities of alternative exploi-

117 Osborne 2009, 161–166.

118 Baillie 1991; Baillie 2002.

119 Whitelaw 2000, 145.

tation strategies, differently pursued by different local groups and individuals, depending on how they evaluated their social as well as environmental opportunities and constraints".¹²⁰ Like Tainter some years later, Whitelaw stresses that the actual outcome of events after episodes or processes of environmental change lies in how the events were perceived by the people most affected. Human decision-making and agency are here continually underestimated and under-explored. Ultimately, how the Argives and Corinthians experienced the events within and around our four periods is dependent on a variety of factors. Considerable chronological leeway is necessary given the inexactness of our dating methods. Over the course of one or two generations a 'collapse' may equally well be regarded as the slow degeneration of one way of life, and the innovation of another.¹²¹

In order to arrive at nuanced and extended, time-sensitive and humanized views on socio-environmental interactions in the pre- and protohistoric Aegean in general, and in our focus area and periods in particular, more integrated studies and high-resolution local datasets are needed. As outlined in the surveys above, climatic and environmental events have been proposed for all four case studies. On a general level, however, and based on the survey and analysis conducted within the Urban Mind project, the impact of socio-environmental interactions on the cultural transitional phases was quite different:

- Case study 1. Possible direct effects of local environmental change, as well as possible secondary effects of supra-regional climate situations contributing to socio-cultural reorganisation.
- Case study 2. Possible secondary effects of supra-regional environmental anomalies contributing to a positive economic development and socio-cultural boom in certain areas.
- Case study 3. Possible direct (and cumulative) effects of local natural disasters contributing to socio-economic instability.
- Case study 4. New climatic conditions contributing to new socio-economic structures and strategies, through adaptation and development, leading to economic and socio-cultural boom.

Overexploitation with resulting degradation of lands in marginal and uplands areas is a common denominator in previous research in three of the four case studies. The results thereof are, however, different. Our understanding of the Early Bronze Age has so far been impaired by an apparent over-generalization of both climatic and other environmental effects, as only coastal areas seem to be affected and the likely cause is short-term effects of intensive use during a nucleation phase (a possible contributing factor for failure to maintain current social structure). Any effects of the expanded use of the greater landscape during the first half of the 3rd millennium seem now not to have been a major factor in the later socio-economic decline. Instead, local and short-term effects seem more relevant in the focus area. During the last centuries of the Late Bronze Age, the landscape was clearly densely occupied and utilised. It seems, however, that the landscape was well managed through terracing and that negative effects came only as a result of decreased societal complexity, with the degeneration of these environmental countermeasures, as central Mycenaean control weakened. During the

120 Whitelaw 2000, 145.

121 Cf. Broodbank (2000, 321) arguing from the point of view of the Early Bronze Age Cycladic islands and the Aegean around 2200 BCE for "a major ending and a beginning of a new order".

Iron Age, climate-induced aridity caused problems in maintaining agricultural activities on marginal lands. Still, the area most affected remained the core area of habitation, and the problems became incentives for socio-economic reorganisation through societal hierarchisation and ultimately the regeneration and the end of, or at least the diminishment or alteration of, aristocratic rule.

It is difficult to disentangle the difference between long- and short-term events and their possible effects on life and the different measures taken by people in relation to them. The volcanic eruption on the island of Santorini caused total devastation locally and also disruptions in neighbouring areas to the east and south, but it led to regeneration and economic expansion on the Greek mainland. During the Early Bronze Age, high-effect climatic events in Asia Minor were probably direct factors for major local disruptions. This time these distant events seem to have had secondary negative effects on the Greek mainland as well, but in other areas of the Aegean the time was one of increasing prosperity. It is therefore inadequate to evoke Middle Eastern data sets to explain and/or nuance events on the Greek mainland without considering regional climatic variability within the Eastern Mediterranean. Finally, earthquakes led to local problems in the Argive area during late Mycenaean times; they may have contributed to the cultural decline but are not likely to have been decisive, and moreover the extent of the decline is in question.

Tainter has argued that increased complexity is a sign of successful problem solving. The three historically based outcomes of long-term change in problem-solving societies (or institutions) are continuity based on growing complexity (i.e. sustainability), simplification (i.e. resiliency) and, simply, collapse. Increased complexity will increase costs, while the two other outcomes will cut costs, whether deliberately or by force. Tainter is careful to distinguish between sustainability and resiliency, arguing that “[m]ost of us prefer the comfort of an accustomed life (sustainability) to the adventure of dramatic change (resiliency)”.¹²² He also argues that “sustainability is not the achievement of stasis”,¹²³ but must be achieved through action. With the involuntary element inherent in the term ‘collapse’, it follows that, according to Tainter, collapse can never be the intended result of successful problem solving. The two roads to societal survival must therefore be increased complexity to secure continuity, or deliberate and dramatic change. But we ask ourselves: how do we make out intentionality or the lack thereof in prehistory? On the face of it, our four case studies seem to fall into two groups, with two periods of economic expansion and increased complexity, and two displaying many signs of decline and relatively rapid change. All four case studies hold discussions on societal complexity, whether waxing or waning. For the three Bronze Age case studies, the grounds for arguing societal complexity are similar. The physical appearance of the ‘urban’ thus is manifest in the layout, distribution and organisation of monuments, and evidenced in supra-regional contacts, communication and trade, within an administrative and economic system. For the Iron Age case, the urban comes out as initially more of a mentality – an urban mind. Perhaps it is telling that it is the youngest case study that brings this result. This is a time when the archaeology of the Greek past begins to be supplemented by written texts. How would the three Bronze Age cases be understood if we had the same nuanced record for these time frames?

122 Tainter 2006a, 92.

123 Tainter 2006a, 93.

What seem to be the most significant signs of change around 2200 and 1100 BCE are the disappearance on a supra-regional scale of common features in material culture, and the pronounced regionalism and small scale of life, coming out on the other end. For the events centring around 1600 BCE and 700 BCE the reversed is apparent. Above all, the marked distinctions between the before and the after in all four case studies suggest that the attitudes of the people concerned had somehow shifted. Were these changes the outcome of external forcing mechanisms? New prerequisites seem to be present in all cases. These need not be seen as either positive or negative in themselves. There is also a significant measure of continuity, at least in the Mycenaean case of apparent decline, through some continuations of organisational complexity.

In a long-term perspective, surpassing the two-hundred-year time frames of the case studies but still central for the discussions of all four, climate change set into motion one process that had, at least from a modern point of view, generally positive effects. During the course of the Iron Age, an elite way of life was set aside or at least effectively balanced by a growing sense of communal identity, leading to new urban classes and a renegotiation of government and organisation. In some sense, an elite cultural overlay of aristocratic competition and display was gradually replaced with a new one based on other ideals and social hierarchies. Reviewing the evidence from the Bronze Age, similar processes may in fact have been in effect.

In the first and third case studies, events can be described as the disappearance of a cultural and economic overlay developed over previous centuries and leading to ever increasing societal complexity. A high level of social hierarchisation and complexity was clearly manifest in both cases (the degree and extent more commonly accepted as higher for the Mycenaean case than the Early Bronze Age). In the Mycenaean case, these processes got a kick start partly through the Santorini eruption and the waning dominance of Minoan Crete, as outlined in the second case study. If anything, the prerequisites seem to have been benevolent for agriculture (possibly wetter conditions during the Early Bronze Age, and geomorphologically stable conditions on the Argive Plain during the Middle Helladic and Early Mycenaean times) which was positive for developments in farming societies like these. Climate and environmental variability seem, however, to be just two of several factors causing the disappearance of political and economic centralisation and/or control around 2200 and 1100 BCE. Judging from archaeological data pertaining to these events, the effects seem rather more negative than in the Iron Age case, and it would appear that Tainter's definition of collapse is valid in that a "society has collapsed when it displays a rapid, significant loss of an established level of socio-political complexity".¹²⁴ "Complexity", in turn, "refer[s] to such things as the size of the society, the number and distinctiveness of its parts, the variety of specialized social roles that it incorporates, the number of distinct social personalities, and the variety of mechanisms for organising these into a coherent, functioning whole."¹²⁵ The description fits well with the decrease in settlement numbers and size, the decrease in craft specialization and the disruptions in long-distance exchange networks, as well as the loss of administrative tools and central places.

124 Tainter 1988, 4.

125 Tainter 1988, 23.

Many societal processes are, however, difficult to reach when dealing with the distant past. One common problem is to find ways to elucidate events on the level below the more acutely visible cultural overlays. As already mentioned, another problem is to forge out and close in on the (degree of) intentionality in the apparent downsizing of some societies, without having evidence of, for example, wage cuts and economic mergers as cost-reducing strategies.¹²⁶ Collapse on the surface may in any society, and with all the facts at hand, turn out to be acts of resiliency at work on a more basic level. In fact, there may be cases for all three outcomes as listed by Tainter to be working simultaneously but on different levels in the same society. This would depend on whom you ask in any given society. As argued by Tainter himself, “people sustain what they value”,¹²⁷ and this can clearly differ between different groups within the society as well as between individuals.

Were urbanism and/or the urban mind in the Aegean Bronze Age in fact something for the political elites? Probably not, but to get to the configurations and expressions of the urban minds of other groups we need to acknowledge alternative, less monumental, physical manifestations of the mental processes at work. All elites may have their value base concentrated on the physical manifestations as ground for conspicuous display and political competition. For most people living within or close to the larger settlements, the physical manifestation instead may have worked as expressions of group identity focused on a certain place in the landscape. The physical expressions, such as walls, streets and monumental buildings, may thus be seen to frame the experience but not define it, as is very clear from the development of the *poleis* during the Iron Age. In the last case study it is evident that the physical city was only the tip of the iceberg, appearing only at the end of a long process.

Life in prehistoric and early historical settlements always had agriculture and herding as its main economic base. At times, however, throughout the Bronze and Iron Ages and beyond, it seems that the communal ‘urban’ life – with a greater emphasis placed on trade, administration and specialization – held a higher attraction for a larger number of individuals, perhaps at the cost of basic activities, perhaps even at the cost of society’s well being, and thus contributed to the end of expansion phases. Life continued even after these turning points, without Early Bronze Age corridor houses or Mycenaean palaces, and likely with the central value bases intact for most of the people concerned. It would have been a time of restructuration of society, but how profound was it really? Is this sustainability through ‘collapse’? Or are we dealing with resilience? Or do these terms fail to take in the full dynamics of human and urban life? Erosion or other kinds of environmental degradation do not in themselves bring about decreased settlement numbers, nor does climate cause a ceramic style to change. People do. People relate to and act in the face of new circumstances before the impact of the circumstances is fully understood. Even in the face of forcing factors, patterns of life are changed only after deliberation by the people involved. The outcome of fundamentally changed prerequisites for a society should therefore also be seen as a mental process, and important keys for the understanding of cultural transformations are likely to be found in that process, generating in turn the more acutely visible material circumstances.

126 As in the examples given by Tainter for what he calls the early Byzantine recovery during the 7th century CE (Tainter 2006a, 97f).

127 Tainter 2006a, 92.

Future prospects

In regard to using social lessons from the past to address today's challenges, we see several ways to continue. More in-depth and integrated analyses of climatic and archaeological data are clearly needed and potentially very fruitful. In that vein a project is now underway as a result of the Urban Mind Idea Development Project, involving archaeologists and natural geographers in a study of cave speleothems and archaeology in the north-eastern Peloponnese. The intended focus period is the Bronze Age and the aim is to build a contextualised socio-climatic sequence for the region to evaluate any local and regional climatic stresses on the historical development.¹²⁸

In the "Climate and Ancient Societies" conference in October 2009 in Copenhagen, it was continually emphasised that collapse is something for the long-term perspective to pass judgement on. Even in historical studies, it is sometimes necessary to point out the importance of the long-term view to understand relatively short-term events. In studying actual changes, however, focus should instead be on the short term and on the choices of the people who experience the changes. In that respect the urban minds of these people gain additional importance. It is also increasingly clear that the urban mind is something beyond the physical manifestation of any settlement, town or city; it is rather a mindset that *enables* the development of a physical urban environment, whatever its form. What did people value enough to sustain and what was allowed to pass, and what can that tell us about the past and how does it apply to the future?

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6. The Urban Mind is the Normalcy of Urbanity

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ABSTRACT

The three sections presented here – (1) Changing Urbanities: Revision and Radical Critique, (2) Threshold Effects in Urban Society, and (3) Resourceful Urbanity Triggers Language Resilience – are based on the contributions to the Urban Mind project, frames 3 and 4. In these frames the ‘urban mind’ is looked upon as the normalcy of urbanity.

The authors stress the following in their discussion. (1) To the urban mind, the urban tends to be a world of its own created by humans in opposition to the non-urban, which can be termed in various ways, such as nature, the rural, the countryside, the archipelago and so on. (2) The urban mind is aware of no more than two kinds of latent crises threatening urbanity: (2a) a crisis solved by means of remodelling urban life space, social norms and interaction, and (2b) a crisis remedied by means of an ideological change rooted in an understanding of the non-urban. (3) Language interacts with urbanity to become a typical outcome as well as a dynamic generator of the urban mind.

Introduction

Normalcy? We have chosen this once uneducated alternative to normality because it hints at the ambiguity not only of the normal, i.e. what conforms to norms, but also of what conforms to the normal: should it be ‘normalcy’ or ‘normality’, and does it matter? The three sections presented here – (1) Changing Urbanities: Revision and Radical Critique, (2) Threshold Effects in Urban Society, and (3) Resourceful Urbanity Triggers Language Resilience – are based on the contributions to the Urban Mind project Frames 3 and 4. In these frames we have come to look at the ‘urban mind’ as the normalcy of urbanity.

Already in 1912 the sociologist Howard Woolston¹ linked the urban mind to social habits that characterized people living in densely populated urban so-

¹ Woolston 1912.

cieties, and he called his article – a typical example of the work of the Chicago School – *The Urban Habit of Mind*. In the same year Scudder² praised the rural mind in contrast to the urban, and in his article we sense a radical critique of Woolston's article behind phrases such as

The fully developed rural mind, the product of its environment, is more original, more versatile, more accurate, more philosophical, more practical, more persevering than the urban mind; it is a larger, freer mind and dominates tremendously.³

The truth of Scudder's advocacy is such that 'rural' and 'urban' are interchangeable. Both concepts, nevertheless, are 'habits of mind'.

One generation later, Herbert Shenton⁴ simply talks of the urban mind as the self-realization of people living in a city, and thus we are close to defining the urban mind as regulating the normalcy of urban life for better or for worse.

The urban mind is nothing more than the interacting minds of individual city dwellers. It is composed of the minds of individuals but of individuals who have developed habits of thinking as a result of urban life. It reflects collective habits of thought many of them in accord with highly stereotyped patterns. These thought ways of city dwellers are what we are accustomed to call urban mindedness.

After the Second World War when urbanisation escalated, not least in the 1970s, these perspectives centring on normalcy, critique, value, social psychology and obviousness were sometimes rediscovered but also simply incorporated into the concept of urbanity. In this decade there is polarization when it comes to understanding the urban mind but also a growing insight that the urban mind is problematic and something poorly understood. Ritchie⁵ sets up an opposition between an island mind of place and wholeness, and a continental mind of space, movement and direction (defined as a compass point). Carried away by his metaphors, he starts wondering whether the urban mind is indeed an island mind. Immediately sensing a number of problems equating urbanity with insularity, he is quick to lament our lack of knowledge about the urban mind, since it may be a new way of thinking.

Higbee⁶ on the other hand criticizes the inability of the urban mind to adapt to changing technologies. Ritchie's approach is social psychological, seeing radical opposition and difference between different minds. Higbee's approach is almost practical and processual inasmuch as he understands cities as indispensable and synthetic ecological systems. Hence, to Higbee's mind appalling urban phenomena such as slums, lawlessness and pollution are signs of man's failure as a social animal to adapt with sufficient speed and remain abreast of technology, as indeed he should. Higbee differentiates between an agrarian and an urban mind and

2 Scudder 1912.

3 Scudder 1912, 175.

4 Shenton 1933.

5 Ritchie 1977.

6 Higbee 1970.

their respective ecologies, considering the former to be inferior and the latter not yet developed:

An urban mind, appropriate to the national-universal technological systems which now provide our resources, does not yet exist. We are still a bunch of rural-minded farm refugees trying to function in an urban environment.⁷

Ambivalent attitudes to the urban and difficulties defining the urban mind as a coherent way of thinking became obvious in the 1970s when Higbee's utopian mastermind or five-year-plan attitude to technology-driven man was contrasted by Ritchie's equally utopian small-is-beautiful attitude to the human-scaled island mind.

In his review of Higbee's book, Mattingly⁸ pointed out Higbee's lack of historical perspectives, and his call for a historical understanding was soon answered when studies favourably inclined to city culture began to appear in the 1980s. Gunther Barth⁹ in his study of the rise of city culture in the 19th-century United States started by pointing out that

City people forged the new culture from the elements that characterized their world. They used the apartment house, metropolitan press, department store, ball park and vaudeville house to cope with the problems created by a rapidly expanding urban setting.¹⁰

This list of (normal) elements forms the chapters of his book and the five pillars of city culture. In the end the 'Resilient City'¹¹ is the outcome of the resourceful city culture.

Nevertheless, it seems that it was not until the beginning of the 21st century, with its obvious urban predicaments and feared future demographic and climatic problems, that the need for a decidedly analytical historical perspective, rather than the birth of the modern, became widely recognized in societies where modernisation had already taken place. In other parts of the world it is common even among the general public – e.g. in Chinese cities, typical new cradles of modernity – to consider the urban mind as closely related to a superior and natural form of civilisation. This is the reason that even the most disgusting misbehaviour is considered 'rural'.¹²

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Since the urban mind is a concept of normalcy, it evades definition by traditional means such as specific category or essence, and there is nothing essentially urban. Conceptually speaking it is global and it includes some components more basic than others. It has, nevertheless, a robust construction, which is able to harbour a number of notions not always in complete harmony with the basic ones.

Similar to the normal, the urban is no more than that which can be contained in urbanity. The ability to know exactly what must and what must not be con-

7 Higbee 1970, 74.

8 Mattingly 1970.

9 Barth 1980.

10 Barth 1980, 4.

11 Barth 1980, 229.

12 Cf. Hanser 2005, 593.

tained makes up a person or a society with an urban mind. In turn, the phrase 'to know exactly' hints at the necessity always to be prepared to negotiate the limits and the character of the urban. And indeed, the very negotiation is in itself based upon the ability to know what is, at a given point in time, within or beyond limits. In practice this means that if one takes up a certain position, one should be able to know whether it is inside or outside the urban. There are a number of notions that may guide one in this situation. We would like to point out two.

The first is the basic fact that the urban world is created by humans. It is the paragon of the complete human space, in practice obviously more or less complete or wanting. It may well incorporate the sacred or a part of nature or anything non-human, but in that case these entities are incorporated or engulfed in the urban. The urban settlement is thus a manmade construction regulating or making human that which is considered natural or indeed supernatural – hence the propensity for the urban mind to be a relatively speaking refined or civilised state of mind. Ideally, the urban takes a stand against untamed nature in cooperation with the rural. Any town is a world of its own and global, despite the fact that towns cannot sustain themselves without bringing their surroundings into a productive balance. Nonetheless, the urban mind will always define the rural as the non-urban and impose a dichotomy where in fact there is nothing more than balance and complementarity. The quality of the urban, however, is such that it will always produce goods and life opportunities strong enough to make the countryside, in its more or less natural form, produce whatever the urban society may need. Because towns are systems that do not obey the rules of evolution, inasmuch as towns are creations and thus recreate rather than reproduce themselves, their existence in time and space may be anything between not really there and never ending.

The second basic urban notion also pertains to the dichotomous thinking of the urban mind. The urban mind is aware of no more than two kinds of latent crises threatening urbanity and the quality of urban life. The first kind of crisis is solved by means of remodelling urban life space, social norms and interaction. This is done with reference to the existing urban system. The second is remedied by means of an ideological change rooted in an understanding of the non-urban, that is, in nature or the super-human or the rural or the supernatural or whatever label we apply to what the urban mind defines as non-urban. There is not necessarily anything intellectually sophisticated in this notion, and thus there is nothing to prevent the townspeople from spending their summer leisurely in the countryside 'recharging their batteries' with something non-urban while observing the 'indigenous' people living their essentially rural lives in the same environment. The point is simply the more or less inconsistent conviction that the urban mind is in itself able both to contain and to develop a radical critique of itself.

The urban mind, as it were, has difficulties differentiating between evaluations and decrees. The rural prompts us, in the same way as a decree, to go out there and recharge ourselves, and once there the rural by contrast evaluates the urban positively and prompts us to return in August more urbanely fit.

Understanding crisis as manageable and non-essential is a reflection of the basic order between the urban and the rural, i.e. the non-urban in a general sense, which refers crisis solution to the method of deciding where the limits of the urban should be drawn by taking up alternating positions firmly inside and firmly outside the urban. Radical critique follows a slightly different pattern. In earlier periods of major urban crisis, such as in the Roman and Byzantine periods, Chris-

tian hermits went into the desert with their criticism of the urban and started a successful ideological revolution,¹³ later followed by similarly based and anti-urban Muslims, before these religious ideologies matured into global and eventually urban-minded notions investing supreme power in God as well as in the leaders of the urban-controlled society.

Today, urbanity is spreading and we envisage a growing crisis as well as a situation in which the energy of the sun must be filtered through a controlled atmosphere, a 'natural' atmosphere as it were, before the earth can benefit from it. It stands to reason that the urban mind comprises very large parts of the world, eventually changing what was formerly rural and natural into urban-controlled production units. 'Nature' tends to move out into the atmosphere where it produces climate in a way that challenges us to start controlling it. This is why we establish the quality of the atmosphere as the prime stage for the production of a new and stable ideology. We tend to see the atmosphere as a space where nature rules and strikes back at the urban mind. For that reason so-called indigenous people – the 'green' ones who live in a stable balance with nature, or at least with the atmosphere – are role models for ideologically conscious critics of modern urbanity and its patronizing urban mind. In the event these critics will be urbanised.

In our frames a number of case studies have corroborated and developed this general outline of the urban mind, but we have also focused on language as one of the principal motors of the urban mind. The reason for this is the ability and indeed necessity for language and urbanity to change simultaneously. In the vein of David Lightfoot¹⁴ we see language as the prime way for the individual to interact and cope with the collective, thus linking something basically internal with its external complement.

Changing Urbanities: Revision and Radical Critique

The Counter-Urban Movement of the 20th Century

In the middle of the 20th century the modern urban society was regarded by some people as one of the main reasons that Europe and large parts of the world were destroyed by war. The moral depravation of the urban society was set in contrast to the simplicity of non-urban, preferably aboriginal, societies. The invention of the Bushman society as the (wonderfully preserved) original hunter-gatherer society is the paradigm of creating an ideological model for a radical critique of the urban.¹⁵

The trend of counter-urbanisation in the United States during the 1960s and 70s was from the outset described by human geographers as an expression of a cyclical phenomenon related to successive stages of urban growth and the new economic power of various social classes and segments.¹⁶ This can be charac-

13 Cf. Eskhult, this volume.

14 Lightfoot 2006.

15 Lee and DeVore 1976.

16 Berry 1976; Hosszú 2009.

terized as a new manifestation of the urban mind and its recurrent critique of urbanity itself.

Although related to the understanding of devastating effects of the self-inflicted war on urbanity in Europe, the American counter-urbanisation movement was rooted in a critique of a strong, growing urban economy that had developed as a result of the war that hit Europe. Instead, the American urban economy was entangled in a war against a rural population in the triple canopy jungles of Southeast Asia, while still being racially segregated between an urban African-American and Hispanic lower class in the inner cities and a 'white flight' middle class in suburbia. Thus, alternative counter-culture communes such as the Hog Farm, the Merry Pranksters, and the Manson family arose.

Counter-urbanisation was often depicted satirically in American popular culture as a youthful initiative of naïve, idealistic, middle-class hippies against the mainstream suburban life of stiff, conformist parents who had grown up in the Depression and the mass-mobilised society of the Second World War. The uglier side effects of American counter-urbanisation, notably drug-induced secularism, did not go unnoticed to the satirists, however (Tom Wolfe, Robert Crumb, Hunter S. Thompson and Frank Zappa). But counter-urbanisation was a much wider phenomenon affecting other affluent areas of the Western world that emerged unscathed from the war, notably Sweden.

The creation of alternative collective settlements in rural Sweden, especially Moder Jord ('Mother Earth') in Tollarp, Scania (founded in 1968), and Skogsnäs near Ramsle, Ångermanland (founded in 1973) was a conscientious reaction against urbanisation but more importantly against the depopulation of rural areas and the use of pesticides. These phenomena were caused by the rapid industrial growth of the post-war period and a demand for increased productivity in the paper industry in the north and the sugar industry in the south. This occurred in a country that, very much like the United States, had an industrial park that was virtually untouched by the devastating effects of the Second World War, but employed a work force that actually had benefited from the war owing to effective mass-mobilisation, with improved health and education as a result.

Although the ideological impact of the war was immense for the mass-mobilised generations that had experienced the war years, the next generation had a different view. They were less keen on embracing all things new, modern and American. They began to look back at what the generation before them had readily left behind in favour of urban modernity. The settlement areas favoured by counter-urbanists were generally difficult to farm, but these were also the areas where farms could be bought at a cheap price, notably the depopulated provinces of Hälsingland, Värmland and Ångermanland.

A key slogan in the Swedish counter-urbanisation ideology was *odlad jord ska förbli odlad* 'cultivated soil shall remain cultivated'. This was the case even though most of the members of the collective farms came from an urban background with little previous farming experience. The most pertinent account from Sweden is the 1976–1982 squatter action at Taråberg in Ångermanland, an isolated small farmstead without access to roads, telephone, plumbing or electricity. Taråberg is located on a mountaintop some 10 km north of the Skogsnäs collective.¹⁷ Taråberg was first settled by Henrik-Petter Nilsson and his family in 1882. In a 2006 interview Folke Vedin (b. 1916) described farming at Taråberg

17 Sjödin 2006; Tidholm 2006; Palmelius 2008; Knutson 2009.

from 1945 and onwards as rewarding but hard work, as the soil of the pastoral meadows proved extremely fertile:

*'Jaa gösse då va no fint därpå ä dänn Tarå, då va man ong förstå du. Å Gud va vi slet ont derne a Evy å jäg... vi bar in ållt hö å feck oppi 40 hässjer ibland. Då vax ju nanting hemskt på ä dänn Tarå'.*¹⁸

'Yeah, boy, it was sure enough fine up there at that Tarå, one was young then you see. Oh God, how hard we worked over yonder, Evy and I. We brought in all the hay and sometimes got up to forty hay-drying racks. There was just something of a frightening growth on that there Tarå'.

But the farmstead had been abandoned by the last settlers in the 1950s, as the sole direct descendant of the last farmer died in 1949. Graningeverken, a large lumber and energy company, acquired the property in 1973 at below-market value. This action was resented by local residents.

The counter-urbanists Ponny Bergström and Svea Telje had co-founded the Skogsnäs collective in 1973 but soon found the collective too crowded. They attempted to buy the Taråberg farm from Graningeverken, but the offer was declined. The company agreed to sell the buildings for 500 Swedish crowns, however, as the counter-urbanists argued that they could dismantle the buildings and rebuild them elsewhere within two years.

Instead the farm was squatted in autumn 1976 by the two counter-urbanists, their two children, and livestock consisting of cattle, poultry, sheep and goats. Bergström and Telje successfully ran the farm largely on a self-sufficiency basis along the lines of traditional non-electrified agriculture for a few years, restoring the buildings and the lands, while still accepting tax-exempt government subsidies for their children like any other citizens. This experiment lasted until Bergström and Telje along with a handful of supporters from Skogsnäs were evicted from Taråberg 14 March 1980.

The eviction was carried out by a force of some 100 mostly urban police officers gathered from all over the Norrlandic region, as local representatives of law enforcement had previously only made half-hearted attempts to evict the squatters. The main house was instantly burned down by the fire department by order of the police; the chimney was dynamited, and diesel oil was poured into the basement storage to render it useless. The eviction and destruction were filmed and later televised in a special feature titled *Ett annat sätt att leva* 'A different way of living', which was first aired on Swedish state television 29 May 1980.

The brusque tactic chosen by the company and the urban police proved successful because there was full freedom of the press. While the Taråberg activists received considerable attention in the media and became a topic of debate in the Swedish parliament, sympathisers clearly feared the consequences of further direct action and doubted their own further commitment to any radical counter-urban cause.

No other Swedish counter-urbanists ever dared to squat abandoned farms after this much publicised event, nor did they ever seriously attempt agricultural self-sufficiency. Yet the doggedly unrepentant squatter-couple soon returned, building a new 20-square-metre log cabin next to the ruins. Bergström and Telje

18 Sjödin 2006, Rååborna.

continued farming at Taråberg for two more years. Telje even gave birth to a healthy child in the cabin while assisted only by Bergström. At that time, they thought that they could continue without a threat of eviction from the landowner as they legally owned the building they themselves had built. Eventually, the government's threat of transforming unpaid squatting fines into a prison sentence caused the couple and their three children to abandon Taråberg in 1982. Landless and destitute, they were offered to manage a run-down farm further up the river valley as tenants. Today, Bergström and Telje still make their living up north while working in the service economy.

In a 2006 interview, Bergström and Telje expressed some second thoughts in regard to the Taråberg action. While still rightfully proud of their idealist vision, they now realised that their stubborn rejection of modernity proved counterproductive in the long run. The strict puritan zeal of self-sufficiency, coupled with overly radical political demands against Swedish property laws and unorthodox dress-code in the style of Swedish 17th-century peasantry, proved too provocative for older generations at the time. The defiant counter-urban posture did not facilitate interaction with the outside world, especially in regard to the essentially sympathetic local law enforcement and neighbouring farmers who nevertheless embraced modernity. Today, such an action would have to be slightly different, Bergström and Telje argued. Today Graningevarken is owned by E-on, which seeks to profile itself as an ecological energy company. In a 2009 telephone conversation with the author, Bergström stated that Taråberg is currently uninhabited, although a new road leads up to the abandoned farm. The fields, although uncultivated, are still open.

Generally, the alternative rural settlements in Sweden were founded on small plots of land. There were far too many settlers to be able to live off the soil; in the case of Skogsnäs some 30 settlers were supposed to subsist on 200 hectares. Nor was it ever possible to isolate the collective settlements as autonomous economic units. Bergström emphasized that in order to buy the Skogsnäs property the collective had to take a considerable bank loan at the very onset. Bergström and other members of Skogsnäs worked as wage-earning lumberjacks for neighbouring farms and companies from early on. Many members also proved to be more skilled as artisans or school teachers than as farmers or lumberjacks.

Thus, the array of alternative collective settlements ultimately failed, one after the other, as they proved unable to resolve the fundamental economics of self-sufficiency. The sole survivors, Skogsnäs in the north and Moder Jord in the south, were quickly able to diversify their output of economic services and are currently more or less wholly integrated in the overall economy. Moreover, the Montessori/Steiner school in Skogsnäs does not seem to alienate local neighbours but has enabled the valuable service of continued education in the area, when the Swedish government appears more reluctant to provide such services in sparsely populated areas.

In the late 1980s many small-scale ecological farms in Sweden opted for a different strategy than reclusion from or confrontation with urbanity. Instead they decided to aim for the larger urban economy with a variety of specific high-profit products. Local cooperation was seen as vital. Cases in point in the province of Södermanland are the Anthroposophists in Järna with the profitable Saltå Kvarn company, and the Rheum association. The latter consists of ten small farms that together provide organic produce to a number of well-renowned first-class res-

taurants and to 'Bondens egen marknad', a weekend open-air farmer's market in the city of Stockholm.

These farms are markedly different from the egalitarian collectives of the 1970s as they often belong to families that have inherited the farms for two to four generations. Rather than a contrast to urbanity, their business approach is dependent on an urban-based income and therefore in itself might be considered an urban phenomenon. Indeed, a detractor may label this business approach as a clever racket preying on wealthy urbanites who buy expensive consumer goods to mollify their own guilt, including non-edible commodities such as daffodils and daisies.

The Urban Critique of the Ascetic Movement

It would appear that the quest for asceticism is an endemic feature in Semitic religion. It is also linked to a radical critique of the urban mind expressed in terms of counter-urbanism or anti-urbanism.¹⁹ This is because the contrast to hermetic seclusion is the crowded and potentially uncontrolled society that is urbanity. The endemic feature of asceticism is a divided attitude to urbanity and the urban mind. The new radicalism of the ascetic movement needs urbanity in order to point out its fundamental errors while asceticism also often proves inherently unable to reform urbanity.

Genesis is by far the best example of the problematic attitude towards urbanism in Semitic religion. The first-born son of Eve, Cain, is not only the first murderer in the world but also the first founder of an urban dwelling, the town of Enoch.²⁰ Those who wrote the Pentateuch were not necessarily ascetics themselves; they clearly understood the importance of asceticism in ideology and in the relationship between mankind and God. Everything seems possible for the denizens of Babel. Following the invention of adobe bricks, they set about building a huge tower in the midst of what was meant to be a great city. God openly disliked the ingenuity that lay behind the Tower of Babel. As a result, God intervened, causing linguistic confusion and scattering the urban dwellers all about.²¹ Afterwards, Abraham was called by God to leave urbanity and instead settle in the land of Canaan.²² There, the twin towns of Sodom and Gomorrah were regarded as wicked and only a handful of the righteous escaped their destruction.²³ It is thus evident that an undercurrent of ascetic critique seeks to reform urbanity from a radically different angle – the incompatible lifestyle – while understanding urban life as a paradigm for human life and civilization that intuitively calls for continuous revision. Thus an urban exodus is sometimes needed so that a God-fearing yeomanry can live off the land in close contact with God. But this

19 Cf. Eskhult, this volume.

20 Genesis 4:17.

21 Genesis 11:1–8.

22 Genesis 12:1–8.

23 Genesis 19.

does not translate into an argument for nomadic life, although this appears to be the extremist viewpoint of the later Rechabites.²⁴

In the Late Roman Empire, the urban mind was in many ways tantamount to Roman imperialist ideology²⁵. Ammianus Marcellinus goes so far as to liken Rome's history to a human lifespan.²⁶ This new ideology that had developed out of the old pagan Roman ideology that praised urbanity as the apex of civilization had now taken on a more monolithic form that held that there were only two cities in the world, personified as the female twins of Rome and Constantinople with one emperor each. The entire world was subject to these imperial residences, and the longest ruling emperor was considered senior in office. The senior emperor answered only to the sole Christian God. Indeed, the first Christian emperor, Constantine the Great (305–337), was later construed to be the 13th apostle of Christ, as he had founded the city of Constantinople in 325 and convened the Council of Nicaea, the first ecumenical meeting of Christian bishops, that same year. Constantine is more likely to have preferred an ad hoc solution, seeing himself as a peer amongst bishops as he remained the pontifex maximus.²⁷ As the empire came to centre round the two cities and the more Christian imperialist ideology, the emperors abolished the title, which was eventually handed over to the pope.

By the same token it may be argued that the imperial administration, while it did embrace Christianity, had only a partial understanding of urban economy and what the effects of imperial presence meant to the urban Christian citizenry, especially in terms of the price edicts and the increasing real costs that came with prolonged visits by the perambulating imperial court.²⁸

The radical critique against the urban mind of Late Roman urban civilization and the two imperial capitals Rome and Constantinople was best expressed by the leading members of the ascetic movement.²⁹ Peter Brown labels this an 'anti-culture' of 'displacement'.³⁰ The leading proponents of this movement are usually described as hermits and monks who had sought voluntary exile in the barren wastelands. But to this one must add the important element of vulgarization.

The ascetic movement was primarily a phenomenon of the eastern part of the Roman Empire, although westerners certainly came to join the ranks. Already present in the late 5th century, non-urban monasticism was to appear on a large scale in the West by the 7th century but only after the actual Roman Empire had been replaced by the Germanic successor kingdoms. To the ascetic movement one may add Augustine, the bishop of Hippo Regius in North Africa, not least on account of his magnum opus, *The City of God*. Augustine is an interesting contrast to the imperialist ideology and the Desert Fathers in Egypt and the Stylites in Syria, as he commented on the demise of Rome as the western imperial capital following the Visigoth sack of Rome while remaining an essentially urban cleric.

The radical critique of the ascetic movement is perhaps an overly easy target for retrospective dismissal. This is not least due to the inherent hypocrisy of their counter-urban ideology. For one, there is an obvious inconsistency in the para-

24 Jeremiah 35:2–11.

25 Cf. Fischer Lejdegård and Victor, this volume.

26 Ammianus Marcellinus 14, 6, 3–6.

27 Brown 2001.

28 Corcoran 2001.

29 Brown 2001.

30 Brown 2001.

bles in regard to the emphasis on humility and effacement of individual genius in the lives of the Desert Fathers, while their hagiographies certainly tell a very different story. The Late Roman Christian exodus from urbanity was never real but rather a partial and elitist egress. Brown labels the leading Desert Fathers 'well-to-do eccentrics'. One may question whether a complete dissolution of urbanity was ever even considered a serious goal of the ascetic movement. Women, in particular, were deemed impure according to the parables concerning Arsenius, and thus unworthy of any association with proper life. It should be noted, though, that other ascetic leaders, notably Pakonios, set up parallel communities of men and women living separately. In general, only a select few (i.e. the Desert Fathers themselves) were given the actual possibility to detach themselves from the monetary economy and enjoy the abstention from interacting with the multitude. Men of lower social rank were often, but not always, allotted menial tasks in order to procure the economic means by which the Desert Fathers could subsist in their quest for ideological purity.

The arguably most pertinent individual 'well-to-do eccentric' among the Desert Fathers is Arsenius the Great from Scetis (c. 350/360 – 445/449). This is because his life's journey appears to be most indicative of a number of discernable trends in the shift from the old western urbanity of Rome to the new eastern city of Constantinople in the general society on the one hand, and of the departure away from urban indulgence in favour of rural asceticism in Christian ideology on the other.

Arsenius was born in Rome, into an affluent Christian family of senatorial rank. He received a good education, and was ordained a deacon by the pope Damasus I (305–384). Arsenius was obviously a well-connected man in the Western Empire when the junior eastern emperor Theodosius I (379–395) asked his western senior Gratian (368–383) to procure a suitable tutor for Theodosius' two sons Arcadius (395–408) and Honorius (395–423). It has been argued that, by this time, Arsenius had already begun to rid himself of his worldly belongings and affiliations. For instance, his family had sent off his sister Afrositty to a community of virgins. Both Damasus and the senior emperor Gratian highly recommended the pious and learned aristocrat Arsenius as an imperial tutor to the eastern junior augusti, and he was soon dispatched to the imperial court in Constantinople in 383. According to accounts, after Arsenius had begun his tenure at the court in Constantinople, the by now senior eastern emperor Theodosius I entered the classroom one day and found Arsenius standing while he lectured to the young princes. The emperor strongly objected to this, demanding that the two youngsters stand and Arsenius sit, as the latter's seniority entitled him to this. Arsenius had supposedly been 11 years at the court in Constantinople when he prayed to God:

'Lord, show me the way of salvation'. A voice came to him saying 'Arsenius, flee from men and you will be saved.'³¹

He thus left the imperial court, travelling south to Alexandria, Egypt, to join one of the communities of Scetis led by Macarios. (A potentially more plausible explanation for Arsenius' departure may have been the death of Theodosius in Milan in 395, and the ascension of his oldest pupil Arcadius to the status of senior

31 *De Vitis Patrum*, V, 2:6.

emperor in Constantinople shortly afterwards. The new situation at the court may simply have become too dangerous or uncertain for the past imperial tutor.) The Scetis community was founded in c. 360 by Macarios in Wadi Natrun, the Nitrian Desert, about 90 km northwest of Memphis (present-day Cairo) and some 150 km south of Alexandria. Apparently, the founder was a controversial figure for his refusal to compromise with the Nicean creed. The junior eastern emperor Valens (364–378) with his Arian leanings had previously exiled Macarios from the community for a few years, probably with little effect.

Upon his arrival at the Scetis community in Egypt, Arsenius was urged by John the Dwarf, a prominent leader of the community known for the virtue of obedience, to rid himself of mundane aristocratic postures. Moreover, his education was considered useless in favour of the certitude that labour and prayer close to God would better suit a devout monk. Arsenius was quick to learn from John the Dwarf, displaying humility by sitting on the floor during meals and never crossing his legs. Arsenius was hence soon given the opportunity to engage in solitude. John the Dwarf allowed Arsenius to settle further away from the monastery, providing him with food. There he could engage in reclusive life, turning away prominent visitors who had travelled far to see him, among them the patriarch of Alexandria, Theophilos.

Thereafter, his life gave rise to a number of parables, edifying narratives that emphasize the virtues and humility of the Desert Fathers. The parables are not overly explicit in their critique of urbanism. Rather they focus on the virtuous life of the voluntarily displaced, of the alternate culture. At one point, a monk who came past Arsenius' cell saw that Arsenius was surrounded by flames, but was subsequently asked by Arsenius not to reveal this to others. These parables are very interesting as they highlight a number of issues regarding the implicit radical critique of the urban mind, while also emphasizing the interconnectedness of the radical critique and the urban phenomenon. But the outside world affected the hermit life in other ways. Libyan tribes raiding Egypt in 434 forced Arsenius to abandon Scetis in favour of a rock on the outskirts of Troe, across the Nile from the city of Memphis. The destruction of the Scetis community was lamented by Arsenius with a very interesting, acerbic comment: 'The world destroyed Rome, and the monks Scetis'.³² This may well have been a critique of the vast conglomerate that Scetis had grown into, with thousands of subordinate monks and peasants supplying the leading hermits with food so that they could isolate themselves from the outside world. Another of the stories regarding Arsenius is most revealing in terms of how complicated a relationship the Desert Fathers had towards the monetary economy. Arsenius once fell sick and had to leave his solitude in order to seek help in the town of Troe. But as medical assistance was a service meted out in monetary terms, problems quickly arose. Arsenius was destitute. He thus had to beg. Someone gave him a coin so that he could see a doctor. It is said that the last 15 years of his life Arsenius wandered in the desert before eventually returning to the town of Troe, where he died at the age of 95.

In the case study of Constantinople³³ the way in which the Church is introduced as the Christian order of the metropolis stands out as the religious coun-

32 *De Vitis Patrum* V:2, 3.

33 Cf. Balicka-Witakowska in this volume.

terpoint to the ascetic and at the same time the successful outcome of societal revision.

Threshold Effects in Urban Societies

Some years ago, on Monday 1 January 2008, the Iranian Minister of the Interior, Mr. Purmohammadi,

separately said he favors the idea, discussed in Iran in the past, of moving the capital from Tehran, IRNA reported. He said the government of President Mahmud Ahmadinejad is studying the idea, adding that the cost of changing capitals would be less than the money millions of Iranians would save by not having to travel to Tehran. Isfahan, in central Iran, has been suggested as one option due to its central location. The city was the capital of the Persian state in the 17th and 18th centuries.³⁴

What was 'discussed...in the past' refers to statements such as the following:

An Iranian MP said in Tehran on Monday [31 May 2004] that the Majlis is ready to consider a threefold emergency bill for moving the capital from Tehran, IRNA reported. The Rapporteur of the Majlis National Security and Foreign Policy Commission Jafar Golbaz characterized the bill as a serious and vital issue. "Given the multitude of problems gripping Tehran, the proposal could be a suitable solution. In many developing countries moving the capital, with aim of reining in many socio-economic problems is a common approach or alternatively, another solution is to separate the political and economic nexus of a country," he said.

He further referred to air-pollution and traffic congestion as the outcome of concentration of many economic, political and scientific centers in the city. "The moving of the capital to another city will resolve all the outstanding problems." He warned on the likelihood of similar-scale quake in Bam to occur in Tehran "as an incident with bomb-like devastation for the capital city." ³⁵

The reasons for moving the capital are typical threshold phenomena: growing pollution and foreseeable earthquake frequencies too high for the developing Iranian state. The hint at security problems in the 'political nexus' is also apparent. When these threshold phenomena reach a certain level they start to become the foundation for a rational economic and political decision which must consequently lead to the suggestion of a specific place (Esfahan) to become the new capital. The reasons for moving to Esfahan are anchored in a concept of the past, the 'Persian state in the 17th and 18th centuries', as well as in one of civilisation: 'In many developing countries moving the capital ...'.

Given second thoughts it would seem that it is not history or politics or earthquakes that lie behind the wish to move, and it is characteristic that there is little interest in arguing for the reformation of the abandoned urbanity. The point is rather that of making a new city in order to ease the pressure on the old one –

34 Newline 2 Jan 2008.

35 Payvand's Iran News 2004-06-01.

in short to make more of the same in a healthy place somewhere else. The new city is supposed to become politically attractive in order to further its success and consequently its growth, leaving behind the less important or less dynamic institutions in Tehran, which has obviously passed its best-before date. There are naturally some ideological echoes in this form of reasoning. They are not very essential compared to practical needs, but they come to the fore as well when we check a similar discussion in the official Egyptian newspaper *Al Ahram Weekly*. In principle this official newspaper thinks along the same lines, arguing for moving the capital away from Cairo. But in Egypt *Al Ahram*, having pointed out the threshold effects and conscious of the value of a pyramidal past, stresses more firmly the historical precedence for moving the Egyptian capital, something this official newspaper believes normally happened in Ancient Egypt, without bothering much about putting the concept of the capital into a historical perspective.³⁶ More or less unconsciously referring either to an Islamic or a pre-Islamic past as a universal model attitude to rational urbanism is standard ideological behaviour among today's more or less canon-based Islamic communities and states. The reference is not to a historical situation but to the universal value of an ideological understanding of the human society.

In Northern Sweden, the town of Kiruna, as we know it, has lost its *raison d'être* because it is situated on top of the profitable iron ore that ultimately sustains today's community. Accordingly large parts of the town will have to be demolished because literally speaking it has been undermined and destabilized.³⁷ The better part of Kiruna must in other words disappear. Traditionally there is a Klondike mentality to mining – exhausting resources jumping from concession to concession, leaving behind abandoned communities. Today, however, mechanisation and the possibility to commute by private car to the mines, work against the tendency to build a community on top of or just next to valuable minerals. The ore bodies in the Kittilä area in Finnish Lapland are a case in point,³⁸ but there is no risk that Kiruna, the community, will disappear or be dispersed into a number of smaller towns in some kind of network among iron ore bodies. It will only be uprooted and replanted in new and hopefully fertile grounds next to the mine.³⁹

Kiruna will become a new town because the iron ore is abundant and exploitation will pay for remodelling. Since we have decided that there are no economic problems in demolishing and rebuilding Kiruna, we have allowed ourselves to base our decisions on history and ideology: Kiruna is the root of the present and the root of all its citizens. True to present-day Scandinavian common-urban-sense compromise, the odd landmark building, such as the church, will be pulled down and rebuilt as a replica of itself. Open access documentation and an archived memory of the old town, together with economic compensation and a new and (hopefully) better situated town, all suffice to preserve the roots of society. There is common consensus in the community and a belief in the town that modernity pays homage to history. There is something to be proud of in Kiruna compared to the large number of small almost deserted former mining communities in the northern part of Sweden. In the policy documents there is

36 Rashed 2005.

37 Cf. Sjöholm 2008.

38 Mining technology.com Anon.

39 Kiruna kommun Anon.

considerable reference to the past as the harsh start of something great and to ecological consciousness as a guiding principle for modern town planning.

Prosperity will reshape Kiruna. The alternative, setting the town itself above exploitation of the natural resources, closing down the mine and turning Kiruna into a university town and a national centre for a number of vital disciplines, is not an option. The pride taken in solving the problems is local.

The Kiruna project is a response to a threshold effect – the open mining areas are slowly approaching the town, but instead of pulling down the settlement little by little the project recognises a threshold and invests in a grand solution making the obvious waste of earlier investments a challenge, a calculation, and eventually the rational solution.

Indirectly the above examples serve to point out some of the stress that the urban mind is exposed to when running urban societies.

Firstly, they point to the fact that phenomena threatening to become threshold phenomena prompt the urban mind to understand urbanism as a cultural and social tool that needs to be calibrated in a situation thus calling for action. When action is taken it is based on a reasonable opinion about what must be done in order to check an undesirable development. 'Reasonable' in this situation does not translate as rational or correct or sound as opposed to irrational or incorrect or opportunistic. Instead reasonable relates to a situation in which we, the 'urban minders', have defined a situation as indeed approaching a threshold, threatening a town or an urban society, which for the very fact that it is threatened must be taken care of. This is true because it is a fact commonly acknowledged that a stressed urbanity under the influence of itself is in need of revision.

Secondly, they point to the fact that the urban mind may fail to solve its problems and fail to keep its urban society unharmed. If we fail, the threshold cannot hold back catastrophe or inevitable fate, which means that restoration and the preservation of historical roots – not even the virtual creation and preservation of the original place as archived records – is a viable solution. Should that happen we have in effect admitted defeat, which we do so very reluctantly that we may well end up defending great loss for the benefit of future good. That is why we have reason to ask ourselves whether the thawing tundra, the loss of stable permafrost, will be the end of Yakutsk (i.e. defeat) or the birth of a Novo Yakutsk (i.e. victory).

Threshold phenomena, therefore, are a driving factor – a stress to the urban mind because they are potentially manageable or disastrous. This predicament colours our understanding of the past to such a degree that *if* we happen to make an observation of what we judge to be the result of a threshold phenomenon turned disaster, e.g. the abandoned and breathtaking ruins of the Massif Calcaire,⁴⁰ we start searching for definite explanations even though we soon discover that what we have observed is probably the result of a change to the better despite the material waste that caught our eye in the first place. We tend to see the unwillingly abandoned in the outstanding ruin. We detect sadness behind the unwillingly abandoned urban society and we see a traumatic loss of history, of social roots and of place. In the volume in hand, the Iranian examples,⁴¹ such as those depicting fragile but profitable conditions, nevertheless speak of a more clear-cut definition of urbanity as a prolific tool for making a profit or a livelihood

40 Witakowski, this volume.

41 Barjasteh Delforooz, this volume.

rather than a permanent place. In these examples abandonment is not defeat, but just a shift of tools when the old ones do not live up to our needs. Nevertheless, when progress leaves ruins behind, instead of cities levelled to the ground, then the urban mind senses catastrophe.

Seeing the urban society as a means of exploitation has grave moral implications for the urban mind. Most European readers will spot dubious ulterior motives behind the wish of those in power to abandon Tehran and create a more manageable political nexus in Isfahan. The same readers nonetheless tend to accept the highly profitable exploitation of iron ore in Kiruna, instead of a less profitable, or a non-profitable, solution that would have saved the community. There are often good reasons for accepting *fait accompli*, and in the case of Kiruna it obviously helps that the documentation project celebrates the past and those 'urban minders' who made urban Kiruna a Swedish cornerstone and a node in *Framtidslandet* 'Future Land'.⁴² There will be no ruination, just a respectful documentation of the necessary demolitions. But the community is saved, that is the point; the physical town is moved in order to preserve the community of Kiruna. It is not a case of abandonment.

In the Iranian examples in the present volume it is easy to accept that urbanity is up against environmental change that cannot be remedied, but it is also evident that slowly disappearing rivers (i.e. necessary water supply) or rivers changing their course will eventually come close to predictable conditions and calculated risks for an urban society – early forms of peak predictions and ways of coping with resource depletion.

The way the urban mind handles threshold effects points out a difference between root societies and exploitation societies, or between heritage societies and tool societies, or societies stressing history as opposed to those stressing modernity. There are no dichotomies in this kind of dyad, just ideal types. Nevertheless, in our case-studies in Frame 3 we are presented with two historical cases which exemplify the dyad – the long early history of the Kos city-state and the short history of the settlement area Massif Calcaire.

The Koan example⁴³ provides a model. A series of cases shows us how a small but autonomous society can cope with complex situations. The first case is the rationalisation of the towns on the island reducing them from two *poleis* to one, that is, the process of unifying the polis of Kos. This process of unification, *synoikismos* in Greek, took place in the latter part of the 5th century BC or around 400, and was probably parallel to similar events in Rhodes; the new polis was named after the island. The process whereby cities disappeared and new cities were founded, in the Koan case on top of an old one, was motivated by political as well as economic needs and conflict, and on Kos the process of unification continued in the last years of the 3rd century when the neighbouring island polis of Kalymna was incorporated into the Koan state. It is significant that this change was not performed without an understanding of the history of the poleis. As places, the cities that disappeared were reshaped and acquired a different status.

There is a strong sense of autonomy, democracy and ancestral roots in this idea of the *homopoliteia*, i.e. the absorption of the two city-states into one politically governed unit, with a view to urban centrality and virtue as well as a characteristic of democracy. Kos is a micro-example of the union as a tool for a better future,

42 Cf. Hagström 2010, 71ff.

43 Cf. Carlsson as well as Höghammar, this volume.

sacrificing earlier units for the benefit of a common good, a miniature EU. The emblem of this is the new capital built on the ruins of the old, the *dipolis*, with an artificial and profitable harbour, fortifications and public buildings. Similarly, during the period of warfare c. 222–200 BCE Kos was hit by a series of earthquakes that partly destroyed the city. Instead of becoming a threshold effect starting off the downfall of the polis, investments in rebuilding the city and in a new coinage befitting both Athenian and Persian trade economy saved the polis. Again a relatively small society managed to cope with potential disaster, investing in the polis as history and the polis as a modern tool after having expanded itself or formed a new unit together with Kalymna.

This Koan balance eventually came to an end. To begin with, the decline started after a new series of earthquakes in Augustan times, when autonomy was no longer an option and Kos became part of the Roman Empire. Later on the Koan society came more or less to a complete end in a 6th-century earthquake when there was no Byzantine will to restore Kos to its former glory and no Koan autonomy to establish more than a village of fishermen in the ruined city and harbour.

The Koan example demonstrates the fruitful balance between a primarily trade- and transport-oriented economy and an urbanity that treats the city as historical roots and as a tool sustaining as well as sustained by autonomy. What brought Kos down was a political situation whereby a global power tended to organize the three balancing components (root, tool and autonomy) typical of the Koan urban mind on a scale which did not suit Kos because the Koan society was too small. From a Koan point of view the polis lost its central position in one system of resilience, i.e. its own Kos-centred system, to a larger, differently centred, Byzantine system.

The settlements on the Massif Calcaire⁴⁴ were predominantly rural, based on family farms and relatively intensive agriculture, gardening and husbandry. In general terms the production at Massif Calcaire would seem to fit a certain economic niche, albeit not a very stable one, and has affinities with urban settlements such as Aleppo. Massif Calcaire was a marginal settlement area comprising about 10000 square kilometres. The success of the production came in two waves. The first was relatively modest, but did give the settlement pattern its overall shape, that is, three separate areas stretching north-south in a total area of 70 by 150 kilometres. The second wave was much more intensive and in this period we see some agglomerations of densely occupied settlements sporting prominent churches, monasteries and the occasional bath. These were urban societies in the making and strongly influenced by a religiously inspired urbanity at odds with Hellenistic or Roman ideas of the city with squares, centres, main streets, city walls and palaces. These villages were agglomerations of people united by their churches and the aesthetics of these buildings. There is nothing of the idea of roots in these urban settlements; instead they represent urbanity growing out of a rural society and finding a religious and social identity in a form of urbanity. One might even suggest that the reason for settling Massif Calcaire was to occupy a marginal area and make it profitable. Be that as it may, the urban villages of Massif Calcaire are a good example of how settlement organisation as

44 Cf. Witakowski, this volume.

a tool develops urbanity based on an ideology with few historical roots within a human history.

We can set up the fate of Massif Calcaire as an example of a prosperous exploitation of an economic niche. The whole settlement site, a small area as it were, was set up to make a profit. The tools were family-run farms and only in the second phase does the tendency to form urban communities become visible. True to their era the town-like settlements were the centres of a small-scale, labour-intensive exploitation of a far from valuable land during a period when traditional urbanity was easily criticized from an ideological point of view. Let us simply suggest that those who settled Massif Calcaire never meant it to be an urbanised state. Let us instead compare the urban communities to a present-day scheme such as ecovillages, urban-like communities fitting into a niche.⁴⁵ Ideologically speaking, ecovillages are modern societies meant to be kept together and alive by universal faith. We may think of the settlements on Massif Calcaire as failures because they were abandoned, but they may still have fulfilled their vital role within the transformation of Late Antique society. The ruins stand as a manifestation of what it took to reform the Antique world.

Resourceful Urbanity Triggers Language Resilience

To begin with, the sociolect Suburban Swedish (originally termed *Rinkebysvenska*) was a spoken language only, but a generation or two after it was first heard it became a written one as well. Suburban Swedish is an unpredicted linguistic success story. In any event, sociolects are easily explained with reference to generational shifts and the introduction of new groups in society or, for that matter, old marginalized groups. The language of the latter is often disguised as a dialect because the new sociolects have become dominant and society's mainstream language. If the new sociolects do not succeed they continue to be sociolects as well as isolated as dialects. Having studied Suburban Swedish as it emerged, Ulla-Britt Kotsinas⁴⁶ view on language change became clear and she noted that language shifts are commonplace as well as somewhat intriguing:

Att talspråket, och speciellt ungdomsspråket, liksom andra kulturformer ständigt förändras kan vem som helst konstatera som inte är helt purung. Plötsligt känner vi lika lite igen oss i ungdomars slangord och uttal som i de nya ungdomskulturerna eller populärmusiken. Men det förefaller faktiskt som om förändringarna är mera genomgripande och går snabbare under vissa perioder än under andra. Allra tydligast är detta i tider då samhället genomgår plötsliga omvandlingar och nya sociala grupper uppstår.

It can be established by anyone not too young that spoken language and especially urban youth language, like other forms of culture, are constantly changing. All of a sudden we recognize ourselves as little in the slang and pronunciation of the young as in new youth cultures or popular music. But it seems that change is more sweeping and faster during some periods than others. This is most obvious during

45 Directgov Newsroom 4 Nov 2008.

46 Kotsinas 1994.

periods in which society experiences sudden transformation or when new social groups emerge.⁴⁷

Referring to social change and new social groups is in many ways correct, but does not reach the heart of the matter. The correlation is instead with urbanisation and indeed the dynamics of the urban mind.

For two generations the urban situation in Sweden has been dynamic and today there are some 80 publishers editing books in foreign languages. Their geographical distribution correlates well with urban and academic centres. Large and dynamic urbanities are enough to attract, sustain and develop literacy, but Falun (Högskolan Dalarna) too has few publishers. All in all 38 different languages are covered by these companies.⁴⁸

In regard to the late 20th century, we cannot explain the situation by referring to industrialization and only somewhat to incoming new social groups or to ghettoization. Moreover, small languages such as Tagalog and Zazari do not represent groups large enough to sustain a sociolect and probably no more than a part-time publisher. Instead, people within the publishing companies act according to ideals rooted in the urban mind when they see an *a priori* value in multilingualism. Likewise, the most multilingual publishers are those that specialize in children's books, obviously adhering to the idea that when living in an urban society it is preferable and easy to manage several languages when one is young. Needless to say, the much debated idea that children with a non-Swedish linguistic background should have the right to be taught their mother tongue is something that in practice only urban schools can live up to.

Urbanities constituting prolific environments for language change are attested in three articles of Frame 4. In the volume in hand, the chapter by Jahani on Balochi literature points out that the urban as an ideal is easy to see in oral stories produced by storytellers in a predominantly rural society.⁴⁹ In these stories the urban is often situated in the once-upon-a-time of the fairy tale with kings and queens and palaces and ministers and indeed idealized urban life. When the chapter turns to written short stories, it becomes obvious that they are *not* tagged with references to typical urban factors. These stories nevertheless link in with urban life because they are written, produced and distributed as an urban product in urbanities, in Jahani's case during the 1950s. These short stories deal with all kinds of subjects and clearly reflect an unstable but nevertheless dynamic present and future situation using a wide range of settings. As stories they are themselves a typical sign of the dynamics of the urban mind, coping with and commenting on urban life even when they are telling us (allegorically) about a rural situation (cf. the short story 'Thunder').

From a literary point of view, Balochi short stories are examples of a literature written by what Georg Brandes would have termed 'Men of the Modern Breakthrough', and they are a prime example of the way the urban mind triggers language, in this case literature. They respond to the urban situation, using the resources at hand, i.e. literacy and book distribution, to produce a new and in this case urban culture. In comparison with the short stories, the oral tales and their

47 Kotsinas 2001.

48 Immigrant Institutet, Kulturnät, Anon.

49 Jahani, this volume.

preoccupation with the urban are more like tourist guide books designed to point out urban face values and to define visitors as visitors rather than participants.

Despite the dynamic urban mechanisms hinted by the Balochi example, the two remaining and initially relatively parallel examples of urbanity and literacy end up completely different. In their description of the linguistic landscape of Istanbul in the seventeenth century, Csato *et al.*⁵⁰ show how multilingualism, the formation of Turkish, and the growth of Ottoman Istanbul run as a troika from orality to literacy and eventually result in modern Turkish, the successor of the language through which the Ottoman Empire was managed. Although there were ups and downs in the history of the city, long-term dynamics and the character and social structure of the city may be expected to have fostered this linguistic success, i.e. modern Turkish, and the fact that Istanbul continues to be a multilingual city of the type we are familiar with even today. Csato *et al.* refer to New York, but the above examples from Swedish urbanities are miniatures of the same urban situation.

Schaefer's oasis-related medieval examples from the Silk Road in western China are by necessity less well documented.⁵¹ But they suffice to show the ability of oasis societies, i.e. sharply defined urban societies based on a gardening urban population, to benefit from multilingual literacy. Simultaneously, and for reasons unknown to us, these societies seem to expose some of their languages to rapid and unforeseeable (linguistically speaking catastrophic) change and loss of literacy. In Schaefer's cases – Turfan and other oases – this implies the loss of written Tocharian and eventually the whole language. The picture we get of the situation between c. 500 and 1200 CE is the following: Tocharian A has already become a highly standardized written language used and copied for religious purposes only, while Tocharian B is changing in a way comparable to the development of Ottoman Turkish. But unlike this language, Tocharian B disappears, seemingly losing its resilience or formative ability to change.

We tend to find the formation of a modern language such as Turkish positive and the loss of Tocharian negative and may therefore ask ourselves in what kind of surroundings languages will thrive and change. Urban societies are in all probability prolific environments, but rather like urbanities themselves their languages may undergo different kinds of change and catastrophe – a parallel to conceptual phenomena such as 'threshold effects', 'revision' and 'radical critique'.

We have chosen to discuss this aspect of urbanity and language on the basis of David Lightfoot's model of how languages emerge. Lightfoot⁵² speaks of a three-way distinction between language capacity, internal language and external language, in reference to Chomsky,⁵³ as a revitalized distinction with origins going back at least to Wilhelm von Humboldt. Lightfoot builds his analysis on four principal components. (1) Primary Linguistic Data (PLD) as perceived by us. (2) Universal Grammar (UG) genetically characteristic of humans. (3) Internal Grammar and Language, I-Grammar/I-Language characterizing the individual. (4) External Grammar or Language E-Grammar/E-Language characterizing the collective in the form of groups. Owing to our being endowed with Universal Grammar (UG), which also surfaces in abilities such as referential pointing,⁵⁴

50 Csato *et al.*, this volume.

51 Schaefer, this volume.

52 Lightfoot 2006, 7 ff.

53 Chomsky 1986.

54 Cf. Tallis 2010.

Primary Linguistic Data (PLD) will now and then be conceived as a cue, that is, a signal such as an action, view, sound or word prompting a new (grammatical) event in a (linguistic) performance. The interaction between internal and external is already embedded in the interplay between Universal Grammar (UG) and Primary Linguistic Data (PLD). The same interaction will be at play between I- and E-Languages and their grammar, which means that one must not simplify language change to being a matter of E-Languages little by little transforming all the I-Languages of a collective. E-languages are a flux because they incorporate a large number of not completely identical I-languages. Indirectly, the character of this interaction is attested by the fact that language change can be fast as well as slow, which means that some changes are more likely to take hold than others owing to the grammatical situation as well as the circumstance. The historical situation as a context, therefore, is essential if we want to describe why change occurs and languages emerge.

Lightfoot's model explains very well why an urban society will trigger multilingualism simply because more Primary Linguistic Data (PLD) will stand a much greater chance to represent new cues. In addition, the introduction to dynamic society will start with children learning their first language and grammar within their family, i.e. their primary social sphere,⁵⁵ but very soon after this phase they will be exposed to other I- and E-languages. The children in Rinkeby, as it were, learnt their first language at home when born into somewhat extended immigrant families speaking their native language and providing a relatively fixed set of clues. But later on, when the children owing to the Swedish suburb model were exposed to the flux of multiple E-languages in the playgrounds, daycare centres, schools and malls of Rinkeby, they interacted in such a way that Suburban Swedish (i.e. *Rinkebysvenska*) emerged. Interestingly enough this led to a literacy that did not take the form of short stories. Instead Suburban Swedish was incorporated in novels successfully mixing suburban and standard Swedish.⁵⁶ Whatever we may think of Swedish suburbs, there is little doubt that as cultures they emerge in a dynamic way both mirrored and aided by language. They are so dynamic in fact that they pose a political problem. In the perspective of the urban mind this is not negative; it just means that the urban mind stands out as volatile to the political mind.

The point in Lightfoot's model is that it introduces the historical scene as an explanatory force inasmuch as it creates the basic linguistic conditions behind different outcomes. Urbanities simply create more scenes or arenas than do less complex societies. Urbanities are resourceful, and people gifted with or forced to develop an alert urban mind make good use of their resources.

Stressing the importance of this view on language, we will often be at odds with the historical documentation of language and the source material that we have at our disposal, because written documents are not very focused on cognitive understanding or on the hyper-dynamic situations often created in urbanities. Instead we will have to fall back on the development of children and their language as a model of historical change, or on centre-periphery analysis as a cross-section mirroring historical stages, the periphery representing the past. It is difficult in other words to control the parameters governing a certain historical situation and, moreover, we do not know much about the way in which language

55 Cf. Simmel 1911:29 ff.

56 Cf. Khemeri 2003; Bakhtiari 2003; Lapidus 2006.

takes an active part in historical change and problem solving. From some urban milieus there are nevertheless exceptions to the rule, as exemplified by the material used by Csato *et al.*, as well as by the extensive Venetian material collected between 1767 and 1775 by Francesco Muazzo and edited by Franco Crevatin⁵⁷ under the title, *Raccolta de' proverbi, detti, sentenze parole e frasi veneziane, arricchita d'alcuni esempi ed istorielle* (A collection of Venetian proverbs, sayings, maxims, words and phrases, enriched with several examples and small stories').

If the interaction between I-and E-languages can, linguistically speaking, create catastrophic change in the sense of rapid and radical change, then this interaction can also marginalize the language of certain groups in society and change the clues emanating from Primary Linguistic Data (PLD). This is essential because clues are not simply instigating change; they may also corroborate *status quo*.

With relatively limited insights into stability and change, other than dynamic urbanities being linguistically dynamic and resilient for the very fact that they create new social groups thus strengthening the output of E-Languages, and the fact that regulated education may work against change and thus keep E-languages at bay, we are virtually unable to predict the role of language in the development of urbanity. We used to hope that language was a tool that did not prevent us from doing this or that and instead helped us to do precisely what we wanted to do. But if Lightfoot is right, we emerge with language as well as vice versa. The predicament rests with the fact that languages suitable for free thinking, such as that of mathematics and logic, are so formalized that in any social connection they stand out as insufficient.

For the moment, the price we pay for resilient urbanities is among other things a weak understanding of the way language affects the urban mind and guides us towards solutions, rendering the loss of Tocharian B inexplicable (but dramatic and possibly traumatic), the emergence of Turkish comforting, and the situation in Swedish suburbs positive as well as problematic, at least to politicians.

Conclusion

In a long-term perspective population growth seems to force the urban mind to produce more and more XXL societies and within the limits of these a multitude of linguistic communities or E-languages. This dynamism is not a matter of necessity; instead it owes its importance to the fact that large size is a choice allowing us to figure out large-scale solutions for small population groups (within which they may experience cultural expansion) more easily than the reverse – i.e. small-scale solutions for large populations to adapt to. One reason for this predicament, the predicament of growth, is our inability to understand the complexity of language as a typical outcome and generator of the urban mind. But a number of other reasons for this situation can also be inferred from the other predicaments discussed above.

When we look into the mechanisms behind the threshold effects of urbanity, three parameters meet the eye. (1) The idea of a resilient urbanity defined as the language-fed, historically rooted, autonomous, human and humanly constructed society. (2) The idea of urbanity as a humanly constructed tool similar to language, uniting people in a situation characterized by modernity and ahistoric

57 Muazzo 2008 [1775].

ideology and combined with a sense of solitary individuality. (3) The idea of radical critique and revision of urbanity as a long-term, cyclic, series of events starting with an intrinsic denial or critique of the kind of urban mind which governs our lives in a specific situation.

These insights prompt the beginning of a new non-urban life based on ideological convictions which equate urbanity with irresponsibility. When successful, this new life is eventually transformed into a new urban mindset distancing itself from the radical critique that instigated transformation. The veneration for extant, ideologically potent languages is probably typical of this development.

Today, because we feel forced to think in general terms about urbanity, we are struggling with all three parameters and they are a predicament because we do not know how we ought to prioritize. We may favour a resilient urbanity although that is not in tune with a much needed radical reformation of today's very large cities. We may prefer small-scale, autonomous and environmentally conscious urbanities based on a so-called green ideology and at the same time know that such a solution to our problems is demographically impossible. Moreover, we are aware that we may be blind to essential mechanisms governing the urban mind, and feel that time scale problems are impossible for us to handle because we cannot understand what a successful radical critique of today's cities will mean for urbanity in the necessary 100-year perspective. We have difficulties, moreover, with reshaping existing cities, preferring as it were to build our new model communities in the countryside, thus spreading urbanity. We are at a loss to understand the impact of language on urbanity.

From a historical point of view, the mechanisms of the urban mind are nonetheless likely to solve the problems of urbanity, falling back on demographic catastrophe and recovering urbanity as a means or *fait accompli* rather than as a general expression of historical roots. The mid-first-millennium demographic crisis, linguistic change, and urban remodelling in the Middle East, the Mediterranean and Western Europe are a case in point. Demographic crisis occurs when society deprives a sufficient number of people of the value of their work, ultimately making it impossible for them to survive. But at the same time demographic crisis – a loss of human beings – is an obvious reason for remodelling society. We can be confident that the urban mind will always be doing the right thing because it plays freely with its incompatible parameters, being always confident, potent, self-critical and modest.

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7. The Role of Natural Phenomena in the Rise and Fall of Urban Areas in the Sistan Basin on the Iranian Plateau (Southern Delta)¹

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ABSTRACT

In ancient times, and even today, water resources, especially rivers, were the main reasons for the existence of human settlements and the formation of the idea of urbanity in the people's minds. This phenomenon can be seen in all places where ancient civilizations were established, e.g. in Egypt, Mesopotamia, Transoxiana and Sind due to the rivers Nile, Tigris and Euphrates, Amu Darya and Syr Darya and Sind, respectively. The Helmand civilization, therefore, was not an exception. Furthermore, after passing a long distance through a desert, the Helmand River reaches the Sistan basin which is a closed inland delta surrounded by terribly dry deserts from every side. This special situation makes the Sistan basin an interesting area for attracting human settlements.

The abundance of water in the southern delta of the Helmand River, the oldest one of the two deltas, created a suitable environmental situation for the people during the fourth millennium BC to settle and establish the only large urban centre, i.e. Shahr-i Sokhta, in the eastern part of the Iranian plateau in Sistan. Natural phenomena such as climate change at the end of the third millennium BC, long droughts, change of the river bed because of tectonic phenomena at the level of the continental platform and violent dust storms caused people to abandon the area after a thousand year of flourishing. Some settlements were established in different parts of the southern delta in intervals after the collapse of Shahr-i Sokhta up to the 18th century. However, considering the small amount of water this delta received, an urban settlement like Shahr-i Sokhta was never established again. Even in the northern delta, where the inhabitants of Shahr-i Sokhta might have moved, no such large prehistoric urban settlement was found, perhaps due to constant floods, droughts and the famous Wind of One Hundred and Twenty Days which buried human settlements and blocked the irrigation canals.

¹ In this chapter I am only going to deal with the southern delta in the Sistan Basin which was completely abandoned by the end of the 18th century. The northern delta may be discussed in another article. (Sincere thanks to Christian Isendahl, Uppsala, for redrawing figures 1 and 3.)

*The eleventh of the good lands and countries which I, Ahura Mazda, created, was the bright, glorious Haetumant.*²

Avesta Vendidad 1. 13

... (the unappropriated glory) which is coming over <to Saoshyant Verethrajan (=the Victorious Savior)> who will rise from the area where the Kansaoya Sea³ is situated supplied by the (River) Haetumant, and Mount Ushada⁴ around which the many watercourses meet, coming from the mountains.

Zamyad Yasht 19. 66

Introduction

Like other major rivers, the Helmand with its two main deltas is also the cradle of the oldest and largest civilization and urban area in the eastern part of the Iranian plateau, namely Shahr-i Sokhta which is situated in the southern delta. Water is so valuable and important to the region of Sistan,⁵ and to Iran as a dry country in general, that its reflection can be seen in Old Iranian mythology and religion.⁶ If we look at Mesopotamia, we can see that after the fall of each civilization a new one appeared; and from the fourth millennium BC until now there have not been any gaps between these civilizations. So, what happened to Shahr-i Sokhta, which after more than a thousand years of flourishing was abandoned forever?⁷ Owing to the fact that almost all the flora and fauna documented for Shahr-i Sokhta in the third millennium BC are still present in Sistan today, archaeologists assumed that probably no major climatic changes had taken place since the time of Shahr-i Sokhta over the past five thousand years.⁸ According to them, the abandonment of this city was due to changes in the river's course and other geological pheno-

2 The basin of the Helmand River (Helmand in Pashto; Hīrmand in Persian), i.e. the region of Sistan, *Latin* Etymandrus. The history of the name goes back to the beginning of the first millennium BC. W. Geiger proposed an etymology for this Avestan name, i.e., 'haētumant-' "rich in dams or dikes" (Av. *haētu-* = Skr. *setu-*, from the root *si* "to bind, fetter", afterwards *setu-* in Skr. has the meaning of a dam or dike by which the single fields are separated from one another when the ground is artificially irrigated). See Geiger 1930, 240–243. The Avestan geography locates Helmand, also as a land, as the southernmost Aryan land. It illustrates the old times when Iranian tribes were still living in the north, in Central Asia, and some of them had not yet started to move towards the south-west as the Medes and Persians did later. Even Indo-Aryan tribes might have colonised this land around the second half of the second millennium BC. My transl. from Wolff's German edition.

3 Lake Hāmūn in Sistan.

4 Kūh-e Khwāja in the middle of Lake Hāmūn. Yasht 19.67 mentions other rivers, including Haetumant which is the most important one that flows into the Kansaoya Sea around Mount Ushada.

5 Sistan takes its name from the Saka, an Indo-Iranian people who are first mentioned in Chinese annals as living in an area that extended from Kāshghar and the Tarim Basin in the east to Bactria in the west. They are also mentioned in the Achaemenid inscriptions and classical Greek sources of the 6th century BC. They moved from Bactria and the upper Oxus lands southwards into the regions of classical Drangiana or Zranka and Arachosia. They gave their name to this region as *Sakastān* > *Sijistān* > *Sīstān* (Bosworth 1968:1).

6 See *Avesta* (the sacred book of Zoroastrianism), and *Shāh-Nāma* (The Book of the Kings, the great Iranian national epic, by tenth-century Ferdowsi).

7 We can add Mundigak, Harappa and Mohenjo-Daro which had the same destiny.

8 Tosi 1972, 3; Costantini & Tosi 1978, 173.

mena. The evidence from historical times agrees with the above idea, with the addition of occasional floods and droughts, but in the case of Shahr-i Sokhta something more must have happened, the effects of which continued for a long time and which finally forced the people to leave the area. In the second half of the first millennium BC Sistan was a province of the Achaemenid Empire, and it remained inhabited with subsequent changes to its capital until the present time without being completely abandoned for any longer period. To arrive at an answer to the above question, the data about the climate of the entire Sistan Basin will be examined and thereafter the impact of the sudden climate change around 2200 BC on the old empires of this region. Finally, the frequent changes in the course of the Helmand River, from the southern delta to the northern, and their impact on the inhabitation around the southern delta will be discussed.

Sistan Basin (rivers bring life to the desert)

With its north-west to south-west oval shape, the Sistan Basin is a closed drainage basin stretching across parts of south-western Afghanistan and south-eastern Iran in one of the driest regions of the world, which often experiences prolonged droughts. This is because it is situated in the desert belt of the temperate subtropical zone of the northern hemisphere.⁹ Hundreds of kilometres of arid plains surround this source of freshwater from every side. The average annual rainfall in the Sistan Basin is about 50 mm, which makes external water sources crucial for the existence and continuation of life in the region. This inland basin is fed by several rivers flowing from the highlands of Afghanistan into freshwater marshes and into Lake Hāmūn, which is the seventh international marshland in Sistan. The Helmand River, the most important river between the Tigris and the Indus and a vital factor for the existence of this basin, rises from the Baba-Yaghma Mountains (5300 m.a.s.l.) about 80 km west of Kabul in the Hindu Kush range, and after following a long course of 1150 km¹⁰ it enters Lake Hāmūn (475 m.a.s.l.). Near Lashkargah,¹¹ the capital of the Helmand Province, the Arghandab River¹² joins the Helmand from the north (*Fig. 1*).

From the juncture the Helmand begins its great semicircular bend, flowing south, then west,¹³ and then – not far after Charburjak, more precisely near Band-i Kamal khan – north to Zaranj where it turns west again to enter Lake Hāmūn. It drains an area of 386000 square kilometres of which about four fifths lie in Afghanistan and one fifth in Iran. Besides the Helmand there are three other main, but smaller, rivers flowing into the lake,¹⁴ namely the Harut and Farah Rivers from the north and the Khash River from the north-east. Overflow from the lakes runs through the Shelah River in the south of Hāmūn-i Hirmand and spills into the lowest point of the basin, the salt flat Gaud-i Zireh.

9 Jux and Kempf 1983, 15.

10 It is 1400 km long, according to Costantini & Tosi 1978, 174.

11 At Qala-i Bust.

12 Two other rivers, Laurah and Tarnak, join Arghandab near Kandahar.

13 Between two terrible deserts, Rigestan in the south and Dasht-i Margo in the north.

14 An integral system, divided into sub-units that are connected to each other at high water levels, and disconnected at low water levels.



Fig. 1. The Sistan Basin and its watershed.

Sistan environmental situation

General view

During the nineteenth and early twentieth centuries several European travellers and agents who visited Sistan noted that there were many ruined buildings and settlements in various parts of the Sistan plain. The unique weather in the area, especially the fierce wind in combination with sand, had badly eroded and destroyed these ruined structures.¹⁵ G. N. Curzon commented that the area “contains more ruined cities and habitations than are perhaps to be found within a similar space of ground anywhere in the world”.¹⁶ According to McMahon, “Everywhere, except on the higher gravel plains, are ruins. Elsewhere, wherever one looks in Seistan, whether in the desert tracts or in the now inhabited portion of the country, are ruins. No country in the world contains so many. They are to be seen in all stages of decay, from shapeless mounds to high imposing structures of great size. They stretch everywhere as far as the eye can reach.”¹⁷ Therefore, it really can be called the “land of a thousand cities”, like Chorasmia and Margiana in Central Asia.

Thus, in order to explain the presence of such a great number of ruined buildings and settlements one should first look at the climate and natural factors which are dominant in this region. We will examine the most important factors in the following section.

¹⁵ Part III of the book *Seistan, a Memoir on the History, Topography, Ruins and People of the Country* by Tate 1977, 179–271) is devoted to “The ruins in Seistan”.

¹⁶ Curzon 1892, I, 227.

¹⁷ McMahon 1906a, 214.

Climate

As Huntington says, “Many writers on Iran have referred to the possibility that in antiquity the rainfall of the country was greater than now”.¹⁸ For instance, Blanford states that, “from the accounts given by ancient writers it appears highly probable that the population of Persia was much greater and the cultivated land far more extensive 2000 years ago than at present, and this may have been due to the country’s being more fertile, in consequence of the rainfall being greater. Some alteration may be due to the extirpation of trees and bushes, the consequent destruction of soil, and increased evaporation; but this alone will scarcely account for the change which has taken place”.¹⁹ Sykes expresses the same opinion: “Alexander’s march with a large army and a huge camp tends to show that Asia was, in his day, not so arid as at present, and it would seem possible that in a sense my observations in Sistan support this contention.”²⁰ Today the annual precipitation in Sistan is 50–100 mm,²¹ but according to the Iran Meteorological Organization the entire precipitation from July 2006 to July 2010, a time span of four years, was 121 mm for Zābol and 134 mm for Zahak.²² The data from the above-mentioned source reveal that during the same period the average temperature increased nearly five degrees to what is illustrated in Table 1 below.²³ On the other hand, owing to the combination of high temperatures, low humidity and strong winds, the evaporation in Sistan is around 2700 mm per year, which is extremely high.²⁴

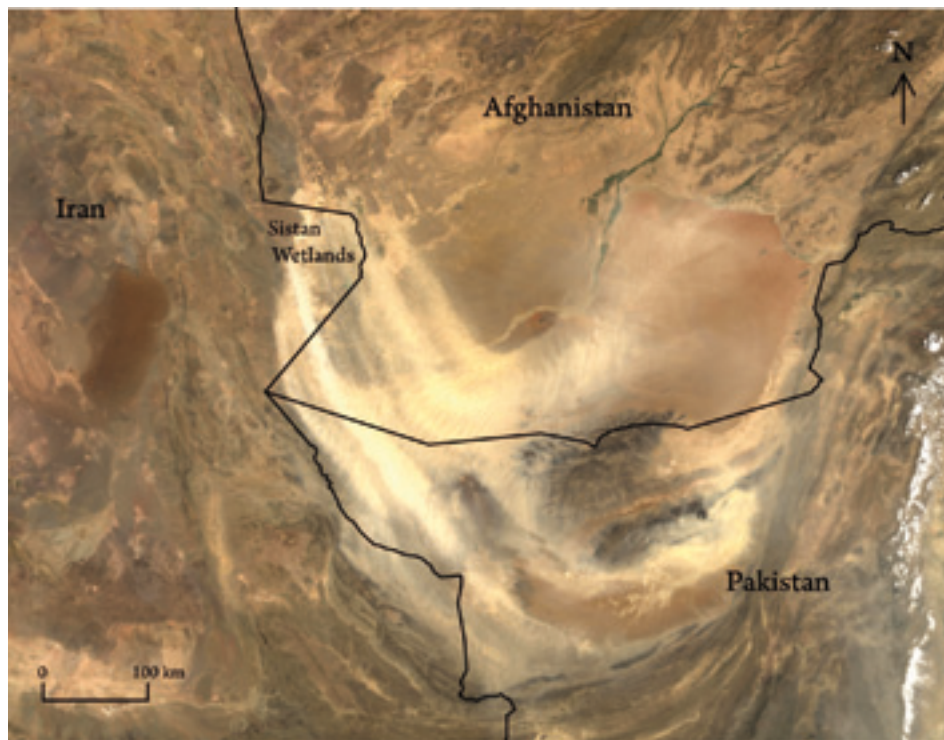


Fig. 2. Dust storm in Afghanistan and Iran. Original image courtesy Jacques Descloitres, MODIS Land Rapid Response Team at NASA GSFC. <http://earthobservatory.nasa.gov/IOTD/view.php?id=3724>. Accessed 20101006. Modified by Christian Isendahl.

18 Huntington 1905a, 302.

19 Blanford 1873, 500.

20 Sykes 1902b, 364.

21 Fairervis 1961, 14; Costantini & Tosi 1978, 171.

22 <http://www.irimo.ir/farsi/current/history2.asp>

23 There are no climatic data available for the annual precipitation, temperature and wind run in the southern delta since there is no meteorological station in this area.

24 Meijer *et al.* 2006, 19.

The geographical location of the Iranian plateau clearly shows its continental position surrounded by high mountains in the west, north and east as well as saltwater in the south. So, it is a country which is obviously continental in climate. Sistan, which is part of this plateau, lies nearly 600 km from the sea and the Makran coast, and is exceedingly continental with hot dry summers and cold humid winters.²⁵ The extreme aridity in climate causes Sistan to have only two seasons: a hot summer of more than seven months from May to October, and a cold winter of less than five months from November to April. The average annual rainfall is very low, about 50 mm, and it normally occurs during the winter. The increase in heat during summer is severe. McMahon states, "The thermometer used to record up to 116° F. (46.7° C) inside our tents, and our solar radiation thermometer used to register outside on cloudless days a sun-heat of 205° F. (96.1° C) by nine o'clock in the morning. It was not made to register higher than that, or we might have obtained still higher records. As it was, it used to register in places a temperature in the sun equal to that of boiling water at the same place."²⁶ He also recorded the temperature in the shade for many months of endless, weary, cloudless skies during summer and found that it ranged between 110° (43.3° C) and 122.5° F (50.3° C) (1906b:333, 340).²⁷ Sykes recorded a temperature of 92° F (33.3° C) during March.²⁸

No records exist from the beginning of the 20th century to the beginning of the 1960s when the office of meteorology was established in Zābol. Table 1 shows the monthly average temperature in Zābol (1963–2000) and Zahak (1992–2000).

Sistan is generally known as the land of wind and sand because the most distinguished feature of the Sistan climate is the fierce and continuous wind. It is a continental wind generated by the interaction between low pressure regions and high pressure ones, blowing constantly through the basin from May to September with little or no cessation from the north and north-west. The wind may reach hurricane strength. It is called the "Wind of 120 days", *bād-i sad u bīst rūzeh*. It ends in late August with "what looks like a pall of smoke collecting over the inhabited area of Sistan as the upper strata of the atmosphere begin to cool down, the *dūd-i Sīstān* 'Smoke of Sistan'".²⁹ Travellers and Sistan Boundary Arbitration Commissions in the early 20th century recorded a wind of 120 mph in Sistan in March 1905. McMahon also mentions that "for a whole sixteen hours the average velocity was over 88 miles an hour".³⁰ He marked Lash Juwain at the north end of Sistan as the place where the wind had maximum velocity and force; it blew throughout Sistan with great strength, was less fierce in the Gaud-i-Zirreh, and

25 However, unseasonably cold weather could wreak havoc here, as was the case with the excessively heavy snowfalls in the winter of 259/872–3, when the young date clusters withered and were rendered barren (*Tārīkh-i Sīstān*, 218, tr. 173–4). McMahon (1906b, 336) noted that "in January, 1905, not only the stagnant Hāmūns and lakes were hard frozen over, but even the big rivers with their strong currents".

26 McMahon 1897, 409. I remember once in 1976 I tried to check the temperature in the sun, but the ordinary thermometer I had was not able to register temperature higher than 50° C.

27 During his mission, McMahon (1906b, 336) lost 16 men due to heat, thirst, cold and drowning.

28 Sykes 1902, 147.

29 Bosworth 1994, 52.

30 McMahon 1906b, 336. In order to understand the destructive power of the blizzards, McMahon continues: "The destruction caused to camels was terrible, and we lost hundreds of camels at a time. The blizzard of March, 1905, killed in four days no less than 200

Table 1. Monthly average temperatures in Sistan (after Ognik and te Linde 2006: Fig. 3-13).

		Average monthly temperature (°C)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zabol													
1963-2000		9	11.2	16.5	23.5	28.5	33	34.2	32.5	28	22	15	10
Zahak													
1992-2000		9.5	12	16.5	23.5	28.5	33	34.7	33.2	28.5	22	16	11

Table 2. Monthly average wind run in Sistan (after Ognik and te Linde 2006: Fig. 3-21).

		Wind run (km/day)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Zabol													
1963-1977		145	165	190	230	370	595	700	680	500	260	155	120
Zabol													
1978-2000		220	285	335	360	545	730	875	860	785	440	260	180

gradually died out in the south of Sistan where it was hardly felt.³¹ Table 2 shows the average daily wind run at Zābol for 1963–1977 and 1978–2000.

Sand and dust storms

As long as there is water in the Hāmūns, the wind is cool during windy periods and the weather is pleasant. Since the Hāmūns are very shallow, as soon as the inflow of the rivers decreases or stops, and there is an increase in the rate of evaporation due to aridity and high temperature, the Hāmūns dry up and are converted into dry lands from April to September. This coincides with the time when the famous “Wind of One Hundred and Twenty Days”, called *Lavār*, starts blowing. The effect of the wind is to scoop up the salt deposits and the dried tiny sediments in such a way that the earth and sky become one moving mass of flying dust and sand.³² The wind carries them aloft for hundreds of kilometres and the visibility is reduced to a few metres (*Fig. 2*).³³

The winds and sandstorms cause significant damage to agriculture by covering lands and vegetations, damaging crops, destroying fruit trees, removing topsoil, and forming dunes. Almost all trees³⁴ and plants are bent towards the south-east because of the north-west wind. The combination of wind and sand has also

camels.” McMahon 1906b, 336.

The wind in Sistan was very violent in 1902, and gusts of up to 90 mph were recorded. Melville 1984, 117.

A cyclonic dust storm in May brought pitch darkness for half an hour and blew a child into the moat round the town of Sistan, where it was drowned (Melville 1984, 133, note 14 quotes from Sistan Diary 1902).

31 Curzon 1906, 350–51.

32 These sand dunes are produced through the erosion of clay topsoil by strong wind.

33 According to local people, during the recent years of drought from 1998 to the present time, the skies overhead have been the dustiest in living memory.

34 The only tree which adapted well to the Sistan climate and environment is the tamarisk.

completely overwhelmed and covered previous human settlements just as it does now. Briefly put, everything in Sistan looks wind-swept and wind-stricken.³⁵

The wind is not entirely bad for the people and it has some beneficial aspects. When the wind sets in, it mitigates the terrible summer heat and makes life more liveable; it clears the air and the Sistan plain of contagious diseases, and drives away the innumerable flies, insects and mosquitoes in the tamarisk jungles and swamps. In the past, in addition to windmills,³⁶ people had a simple system of air cooling. Most people's houses had an open doorway, a window or an opening in the north side, which was covered with thorn bushes. Someone, usually a servant, would sprinkle water on the bushes, and as the wind went whistling through them it was cooled by evaporation, which rendered the inside of the house comfortable. In winter the doorways or windows were closed and walled up with sun-dried bricks of mud.³⁷

Droughts, floods, and severe winters

We have many records and information on periodic drought that occurred in the past two centuries. It may be due to an overall climate change that coincided with a worldwide increase in higher surface temperatures. Several Muslim geographers and historians report such droughts from the 9th century (3rd century A.H., i.e. after Hegira) onwards. Some of these natural disasters ruined the entire crop and caused many deaths (both human and animal)³⁸ from severe famine and

35 All the ruins of Sistan, as with today's traditional buildings, are built at the same angle, with their front and back walls at a right angle to the wind, and their side walls at the same angle as the wind. Only the side walls of the ancient ruins or their traces have remained visible. The back and front walls are completely eroded by the wind.

Kitāb Šūrat al-ard (350–351) records that violent dust storms around 359/970 threatened to swallow up the Friday Mosque at Zarang.

Huntington (1905b, 278) says, "At Chil Pir, near the great ruins of Zahidan, I saw a sacred shrine located on the borders of the dune area, but entirely free from sand. A few months earlier, when the place was visited by Colonel McMahon, of the Sistan Boundary Arbitration Commission, it was completely covered with sand, which – so the natives say – was blown away in three days after the summer wind began to blow. No trees, except the tamarisk, can flourish in Sistan unless carefully protected from the wind."

"On our arrival in Seistan, we found Kila-i-Nau, a big and flourishing village, built on the south side of a high ridge for protection from the wind. Before we left, the sand had attacked that ridge, surmounted it, and buried the village, forcing the inhabitants to build a new village elsewhere. An example of still greater rapidity was afforded at the village of Kila-i-Kohna. Up to June, 1904, this village had a large deep pond on its northern side. By September, i.e. in less than three months, this deep pond was converted into a sandhill some 10 feet high." McMahon 1906a, 225–6. He also says, "Five minutes of a sand-storm would obliterate the deep tracks of an army corps" (McMahon 1897, 408).

To my knowledge, more than ten villages are swallowed up by sandstorms each year.

36 The early geographers and historians noted the use of wind power for driving windmills, i.e. the *Hudūd al-'ālam's āsiyā bar bādh sākhṭa* (the inhabitants possess windmill), quoted by Bosworth 1994, 53.

37 Nowadays people still use this cooling system. It is called *khārkhōna* (house/room of thorn). There was also an opening in a dome-shaped roof of each room towards the north, which was opened during summer and closed in winter.

38 My grandparents remember the drought and famine of 1948 which caused thousands of deaths. They told me that in villages people stole coffins from mosques to be able to bury their dead. Each day some ten people in Zābol died, and hundreds in the villages. The people even sieved horse dung to obtain barley for making bread. I myself remember another terrible drought in 1970–71 when I was nine years old.

epidemic diseases like cholera, plague and typhus. Often the people migrated to other parts of the country.³⁹ Table 3 shows all the records, as far as they could be found, for the natural disasters in Sistan from the ninth century AD and on.

Tāsūkī, a village and prehistoric site in front of the Rūd-i Biyābān delta, was immersed by floods and rising water of Lake Hāmūn in 1990–91. The village collapsed and was later covered by sand (*Plate 1*).⁴⁰ Its inhabitants were forced by the government to move to other places, to Sefidābeh 100 km to the north-west, and to Lūtak 70 km to the north-east of Tāsūkī.

Influences of the river behaviour and effects of environmental changes on the settlements around Lake Hāmūn

It is necessary to study the behaviour of the Helmand River over the last 5000 years, as far as our data allow, if we want to understand the situation of human settlements throughout the Sistan Basin. When the river reaches Kamāl Khān, at the end of its western flow, it runs in a constant northerly direction. Here, near Kamāl Khān, two main shifts from the main river take place, of which only the second concerns human occupation. “The shift has involved a regular clockwise deviation of the bed, the main possible causes being the force of the earth’s rotation or the combined action of tectonic phenomena at the level of the continental platform, associated with vulcanism on the western side of the depression.”⁴¹ Rūd-i Zireh, the first left-hand branch, flows southwards to Gaud-i Zireh. Rūd-i Biyābān, the second, runs in an east-west direction for about 70 km, fanning out in the last 25 km in Iranian territory and irrigating an area of about 400 km².⁴² The present course of the Helmand continues its way towards the north, creating the northern delta of the river. Less than half the way to the present-day Iranian border, the third branch, the Sanā Rūd, leaves the Helmand and flows north-west to a bay, where the village of Aliābād is situated (*Fig. 1*).⁴³

It seems that the Sanā Rūd had a short life and only supplied water for a relatively short time to settlements of the Achaemenid period from about the second half of the first millennium BC. This city was the major administrative, political and social centre of the Achaemenid Province of Zranka. It was situated on a natural hill about 1.5 km long and 300 to 800 m wide, near the old and dried delta of Sanā Rūd. An Italian archaeological expedition located it in the mid-1960s in a place now called Dahāne-ye Gholāmān.⁴⁴ The city consists of large public buildings, some of which had a religious function, as well as residential buildings and an army garrison. The buildings were open towards the south because of the wind blowing from the northwest to the southeast; otherwise windbreaks were placed in front of the entrances. The excavated buildings were clean and no im-

39 We know of three migrations: the first around the beginning of the 20th century to Turkmenistan (from both Iranian and Afghan Sistan), the second and third in 1948–9 and 1970 from Iranian Sistan to the north and north-east provinces of Mazandaran (to Turkaman Sahra) and Khurasan (to Sarakhs).

40 In spite of the great flood in the northern delta, there was no water in Rūd-i Biyābān. The flood caused the tamarisk trees to grow all over the area.

41 Costantini & Tosi 1978, 175.

42 The protohistoric settlements lie within the deltaic fan in this area.

43 The courses of all these branches are in Afghan territory, but except for the Rūd-i Zireh, the deltas of both the Rūd-i Biyābān and Helmand are mostly in Iranian territory and that of the Sanā Rūd is entirely in Iran.

44 Scerrato 1970, 129–31.

Droughts	Floods	Severe winters
835 Bosworth 1994: 45-6 Quoted from <i>Tārīkh-i Sīstān</i>		841–2 Melville 1984: 136 Quoted from <i>Tārīkh-i Sīstān</i> 872–3 Melville 1984: 136 1009–10 Melville 1984: 136 1013–14 Melville 1984: 136 1029 (great hailstones) Melville 1984: 125 Quoted from <i>Tārīkh-i Sīstān</i>
	1037 October Melville 1984: 180	
	1243–44 March Melville 1984: 140 Bosworth 1994: 46	1166 Melville 1984: 125
	1866 Tate 1910: 177	1416–7 Bosworth 1994: 46 Quoted from <i>Tārīkh-i Sīstān</i>
1867–72 Pumpelly 1905: 283		1871–72 Melville 1984: 137 1881 Melville 1984: 137
	1885 April? Melville 1984: 142	1901 December (heavy rains) Melville 1984: 123
1902 Tate 1910: 115	1902 May Melville 1984: 142 1903 Pumpelly 1905: 288 (Quoted by Tate) (McMahon 1906a: 218) 1904 Huntington 1905b: 276 1905–06 December-June Melville 1984: 142 1910–12 April Melville 1984: 143 1915 April Melville 1984: 144 1935 February Melville 1984: 146 1939 Spring Melville 1984: 147 1942 February-May Melville 1984: 127 and note 55 1949 Spring Melville 1984: 147	1910–11 Melville 1984: 137
1948 Melville 1984: 183		1948–49 Melville 1984: 139
1970–71	1975–76	
	1990–91 (2)	1983 (1)
1998– (3)		

Table 3. Records of droughts, floods and severe winters in Sistan. Notes: (1) A great deal of livestock and some people died from severe cold near the Hāmūn shore. (2) The Shelah was full of turbulent water, and communication across it was disrupted for a couple of weeks. People had to cross the river in simple boats. Several people drowned as one of the boats capsized due to overloading and the surging water. Earthen barriers were built around Zābol by the army in order to save the town from being flooded (personal observation). (3) During the last thirty years, thanks to the Chāh-Nimeh reservoir which received water in 1981, nearly all the villages have freshwater plumbing, at least for drinking and public health matters.



Plate 1. Tāsūkī in 2008, seventeen years after the last flood of the 20th century in Sistan (photo by the author).

portant material culture complex has been found, and no sign of any burning or external invasion. Therefore, it seems that the city was evacuated and abandoned in accordance with a preconceived plan after about 200 years of existence during the sixth and fifth centuries BC. It was used by the seasonal shepherds and nomads until the end of the fourth century BC and then gradually became covered by sand for more than 2000 years. We still do not know where the people moved, but we know of two other places by the name of Zaranj in the northern delta. So, the city's inhabitants might have moved to these places, one after another, and given the old name to the new settlements. On the whole, the Sanā Rūd does not appear ever to have directly supported human settlement for a long time as its clay deposit is so thin.⁴⁵ Along the whole course of the river, from where it diverges from the Helmand to where it enters the bay on the Iranian side, there are no remains or even a single sign that points to human habitation.⁴⁶ These three branches form the main three deltas, of which the deltas of Helmand or Hirmand and that of Rūd-i Biyābān are the most important for this study.

The satellite photograph analysed by Costantini and Tosi reveals that the northernmost branch of the Rūd-i Biyābān, which was then the main branch of the delta, reaches two depressions that were identified as the boundaries of two terminal lakes or marshes.⁴⁷ They assumed that Shahr-i Sokhta lay between two marshy zones, in a situation rather like that of present-day Zābol. The environmental situation around Hāmūn, then, made it an interesting and suitable place

45 Costantini & Tosi 1978, 176; Fairservis 1961, 17. As the close satellite pictures show, the Sanā Rūd, in my opinion, is more like an artificial canal – like the ones dug from the Rūd-i Biyābān to Hauzdār – than a real river. The main river bed, or one of the old branches of the Helmand, might be under the remains of the present canal. Anyway, more excavations are needed to know whether there is an old river bed under the new one like that which may have been around Shahr-i Sokhta.

46 This is also true for the Rūd-i Zireh.

47 Costantini & Tosi 1978, 175. They are completely dried up now.

for hunter-gatherer societies to settle in.⁴⁸ As it had rather a good variety of flora and fauna, Sistan at that time was (and still is in regard to water availability) a territory with sufficient resources to support a fairly high population.

In the following sections we will study the rise and fall of the prehistoric and historical settlements around the southern delta of Helmand, that is, the delta of Rūd-i Biyābān.

The protohistoric settlements around the southern delta

Shahr-i Sokhta, which covers nearly 151 hectares, is the largest and best preserved protohistoric settlement⁴⁹ in present-day Iran, and the largest Bronze Age site on the south-eastern Iranian plateau. It was founded on the Ram Rūd terrace⁵⁰ and the agricultural lands of Nīmrūz terrace around the end of the 4th millennium BC (3200). Tosi says: “Only a small number of contemporary towns were comparable: Uruk, Kish, Malyān, Susa and Mohenjo Daro.”⁵¹ This city developed independently of those mentioned above and had its own features. Excavations in different parts of Shahr-i Sokhta and cultural materials scattered on the surface of the site revealed three different sections: a residential area, a necropolis, and a craftsmen’s area. Four periods of occupation at the site are divided into 11 cultural horizons showing the development of the city. The burial ground with an area of 20 to 25 hectares is one of the largest from the Bronze Age in Iran and this part of Asia. It was accidentally discovered in 1972 after five years of excavation in Shahr-i Sokhta. According to the latest estimation, the burial ground contains between 35000 and 40000 graves.⁵² Most of the inhabitants of Shahr-i Sokhta were active in production such as stone carving,⁵³ pottery making,⁵⁴ textile manufacturing, metalwork, wickerwork, hunting, fishing, farming, and trading. They were in commercial exchange with contemporaneous civilizations, and – as the evidence from the burial ground shows – they formed a multiethnic society. The find of a tablet with a Proto-Elamite inscription from the earliest period of Shahr-i Sokhta is a sign of such contact with Mesopotamia.⁵⁵ Figure 3 illustrates the old trade routes that crossed the Iranian plateau during the 3rd millennium BC. This vast area from Mesopotamia to the Indus Valley must thus have been populated at that time. The economic development took the shape of actual urban forms due to ecological conditions and growth potential in the irrigated zones where the human settlements were established.⁵⁶

48 Fischer’s field observations and archaeological evidence gathered at Shahr-i Sokhta prove that the terminal lakes were larger than today, and this is due to the shift of the subtropical high pressure belt for about 10° to the north during that time, according to the available data on the palaeoclimate of the northern hemisphere for the period 3000–1000 BC (Fisher 1983, 60).

49 We can also call it a proto-industrialised city.

50 The four known terraces of the Helmand River are Chahar Burjak, Ram Rūd, Nīmrūz, and Zābol. Jux and Kempf (1983, 42) divide the stratigraphical units of the Quaternary into three levels: Chahār Burjak, Ram Rūd, and Nīmrūz.

51 Tosi 1983, 73.

52 Sajjadi 2007, 23.

53 Semiprecious stones like lapis lazuli, turquoise, agate, and chlorite, and alabaster vessels and flint production.

54 Polychrome containers, grey wares and buff wares decorated with geometrical motifs.

55 Tosi 1976, 168.

56 Tosi 1974, 3.



Fig. 3. Prehistoric trade routes (modified and redrawn from Tosi 1974: Fig. 1).

It seems that the population of the city reached 5000 to 8000 in its time of flourishing. The division of the city into different areas according to the professions of the inhabitants is a sign that the people had the idea of an urban structure in mind, which is basic for administrative divisions in a proto-urban society. For such a society, which had no written language, a kind of administrative system was necessary to control the quantity and quality of production, storage and the process of trading. The data gathered from the excavation of the Eastern Residential Area indicate a system using clay sealings.⁵⁷

For the survival and flourishing of Shahr-i Sokhta and its large number of satellite settlements at that time, a society with a complex social structure, Raikes puts forward three hypotheses: a higher level of the lake, a different climate, or a channel delta of the Helmand/Rūd-i Biyābān passing near the city.⁵⁸ After discussing the first hypothesis, he comes to the conclusion that the level of the lake might have been lower. He also rejects the second hypothesis about Sistan having a different climate at that time and gives several reasons for this. In his opinion, the third hypothesis is more likely and there is enough evidence to support it.

According to the distribution of the prehistoric sites, the delta of Rūd-i Biyābān extended from Hauzdār in the north to Ram Rūd in the south where there are indications of former delta channels (Fig. 4).

These old, and still occasionally used, drainage channels with water about two or more metres deep are marked by tamarisks both in the Ram Rūd area and in the south of Shahr-i Sokhta. Therefore, Raikes concludes that the whole canal system is buried under four or five metres of sediment and sand.⁵⁹ This hypothesis is also supported by McMahon's report that "we find immersed under the waters at the north-west course of the present Hāmūn the ruins of the city of Sāberī Shāh".⁶⁰ In this connection it can be noted that recent field surveys carried out by Iranian archaeologists from the University of Sistan and Baluchestan

57 Fiandra and Pepe 2000, 467–468.

58 Raikes 1983, 61–62.

59 Raikes 1983, 65. He proposes the average rate of aggradation per 1000 years for the whole Sīstān Basin.

60 McMahon 1906a, 220. In the northern delta and it should be more recent than Shahr-i Sokhta.



Fig. 4. Survey of evidence for Bronze Age settlement showing the concentration of activities on a then active but now largely abandoned alluvial fan (map from Tosi 1973). Andrew Sherratt (2004), "Sites from Satellites: Shahr-i Sokhta, Iran", ArchAtlas, February 2010, Edition 4, <http://www.archatlas.org/SitesFromSatellites/sites.php?name=sha-i-sok>. Accessed: 15 September 2010).

revealed 850 sites in the area, about 1200 km². Most of these sites are located in the present lake bed. This shows that in the Bronze Age (2800–1800 BC) the lake level was much lower than in later periods.⁶¹

After its time of flourishing 2700–2400 BC, Shahr-i Sokhta began to collapse around the end of the 3rd millennium BC (2200) and it was completely abandoned around 1800 BC.⁶² No fortifications have been found around the city so far. There are no traces of extensive fire or external attacks in the excavation data to convince us why it was abandoned. Although in some parts the city had burned at least twice, the ruins were reoccupied. As mentioned above, the third of Raikes' hypotheses is taken here as a reasonable one for explaining the flourishing of Shahr-i Sokhta and the aggradation of Rūd-i Biyābān's canals, which after a thousand years reached one metre. Changes in the river course alone are not sufficient reason to account for these developments if we take into consideration the fact that life could still be lived there by depending on the lake, as the inhabitants of Shahr-i Sokhta did not seem to be agriculturalists. Sistan was at that time in its Dry Period (Subboreal).⁶³ During this period the size of the terminal

61 The project began four years ago and is still running. I got this information through personal contact with my colleagues Dr Mehrafarin and Dr Mousavi Haji of the Department of Archaeology at the University of Sistan and Baluchestan. Their archaeological survey report on Sistan will be published soon.

62 The oldest part of Tape Sefid Dāgh and that of Tape Sorkh Dāgh near Nād Ali were inhabited at approximately the same time (Fischer 1983, 51).

63 Fischer (1983, 50–52) divides the Holocene of Sīstān into four subdivisions: *Main Wet Period (Atlanticum)*, *Dry Period (Subboreal)*, *Wet Period (Subatlanticum)*, and *Last Dry Period (Modern Time)*.

lakes was reduced, and because of water shortages the lakes and the deltaic fan of the Ram Rūd dried up frequently. Therefore the settlements had to be gradually abandoned.⁶⁴

There is more evidence for climate change in other old civilizations of the world near this area and during this time, which can support and explain the situation in Shahr-i Sokhta at the end of the third millennium BC.⁶⁵ Staubwasser *et al.* propose a possible explanation for the abandonment of the large cities of Harappa and Mohenjo-Daro in the Indus Valley around 2200 BC: namely, reduction of the average annual rainfall which restricted Harappan farming.⁶⁶ This climate change was revealed by planktonic oxygen isotope ratios off the Indus delta. At the same time dust flux from northern Arabia and Mesopotamia increased, which shows that something was going on there as well. Information obtained from the analysis of sediment cores collected in the Nile delta in Egypt indicates that paleoclimatic and Nile baseflow conditions changed considerably from about 2200 to 2000 BC in the Nile basin.⁶⁷ Annual flood and baseflow of the Nile decreased and resulted in a drought which probably was a contributing factor to the collapse of the Old Kingdom in Egypt.⁶⁸ The drought was widespread across much of Africa and Asia and even led to the collapse of civilisations in Syria, Mesopotamia, Turkey and elsewhere.⁶⁹ Abrupt climate change and the extensive impact of the resulting long drought in northern Mesopotamia in 2200 BC, which is proved by archaeological and soil-stratigraphic data, define the origin, growth, and collapse of Subir, the third-millennium rain-fed agricultural civilisation on the Habur plains of Syria.⁷⁰

Considering the climate change which took place at about 2200 BC in the Indus Valley and Mesopotamia to the east and west of the Sistan Basin, respectively, and also in Egypt (and even in Central Asia and China), there is reasonable evidence to indicate that the same event took place in Shahr-i Sokhta. Although more studies should be done on the lakes, deltas and river beds to a depth of at least 5 metres, one can, going by the facts at hand, come to the conclusion that climate change led to low precipitation in the Hindu Kush Mountains and resulted in a decrease in the Helmand flow and the drying up of the Hāmūn lakes.

64 Near Tape Rūd-i Biyābān 2, a satellite vicinity of Shahr-i Sokhta, 50 large and highly specialised pottery kilns were found. The decentralization of these manufactories was due to the easy access to sources of water and clay, abundant fuel (firewood), and the considerable amount of pollution produced by them once activated. (Tosi 1972, 4).

65 Some other important cities in the eastern part of Iran, contemporaneous with Shahr-i Sokhta, were abandoned during the early centuries of the second millennium BC (like Tappe Hisar-i Damghan).

66 Staubwasser *et al.* 2003, 7–2.

67 Stanley *et al.* 2003, 395. See also Kuper and Kröpelin (2006) for more information on the climate of the area covering the eastern Sahara of Egypt, Sudan, Libya, and Chad, written during the past twenty years.

68 Stanley *et al.* (2003, 398) quotes the inscription of Ankhtifi from Bell (1971, 9), “All of Upper Egypt was dying from hunger, to such a degree that everyone had come to eating his children. ... The entire country had become like a starved (?) grasshopper, with people going to north and to the south (in search of grain)...”.

69 Stanley 2003, 401.

70 Weiss *et al.* 1993, 995. Abundant, fine, windblown dust was found in soil samples from Tell Leilan in the northern part of Mesopotamia, showing the suddenly dry and windy environment the people faced and their retreat to the north and south before reoccupying the site about 300 years later (Kerr 1998). The dust was also found in the Indus delta.

Aridity was intensified and sandstorms filled and blocked the canal systems of the Helmand River, especially those of Rūd-i Biyābān.

The historical settlements around the southern delta

The complete collapse of Shahr-i Sokhta and its satellite villages around the southern delta had apparently taken place in the 18th century BC when the Rūd-i Biyābān dried up completely; there are no traces of any other continuous civilization or settlement there until about the mid-first millennium BC when Achaemenid settlements were established at the Rūd-i Biyābān delta and that of the Sanā Rūd.⁷¹ It proves that water was flowing again into this branch of the Helmand River, and water was probably conserved by building dams and digging an ingenious canal system which in ancient times was used to irrigate the southern part of the Sistan plain in Ram Rūd.⁷²

One of the ancient capitals of the Sistan region⁷³ in Achamaenid time, which was mentioned by the Greeks, was Ariaspa or Agriaspa, called after the name of an Ariyan tribe that held the city. Rawlinson and McMahon identified Agriaspa with the ruins of Ram Rūd in the Rūd-i Biyābān/Tarākun⁷⁴ delta. Our sources are silent about the period from the fall of the Achaemenids to the rise of the Sassanids for about four hundred years. J. P. Tate who visited the ruins says, "As far as the eye can reach towards the west, groups of domed buildings containing tombs stand on all the headlands of the dasht..." He also mentions a famous fire temple that stood in Tarākun in pre-Islamic time.⁷⁵ Excavation of sites on both sides of the Iranian-Afghan border in the southern delta is needed to answer questions such as whether the water was available in the delta or if the Helmand changed its course again, and if the sites were inhabited during that period.

Based on the distance of three stages from Zaranj on the road to Kermān, as given by Istakhri, Rawlinson assumes that the Sassanian city of Rām Shahrīstān as an ancient capital of the province was built on the site of Agriaspa.⁷⁶ He quotes from Istakhri in saying, "but owing to the bursting of the dyke in the Helmand, the water of this canal was lowered and cut off from it, so that its prosperity diminished, and the inhabitants removed from it and built Zaranj".⁷⁷ Tate believes that the three stages given by Istakhri might be a copyist's mistake.⁷⁸ By analysing Istakhri's account of Rām Shahrīstān and considering the situation of Ram Rūd,⁷⁹ Tate comes to the conclusion that the ruins of Rām Shahrīstān, which was the

71 It means that the Rūd-i Biyābān did not flow and the southern delta was dry for about 1300 years. We no longer talk about the Achaemenid settlement – which was called, after its present place-name, Dahāne-ye Gholāmān 'Slaves' Gate' – in the Sanā Rūd delta as it was inhabited for a short time. It seems more like a conventional place that was buried under the blowing sand after being abandoned.

72 See below, Jū-ye Garshāsp.

73 Zranka, in Old Persian or Drangiana, in Greek, in the time of Alexander the Great.

74 Rawlinson 1873, 274; McMahon 1906a, 220. Two other pronunciations of the name are Trākhūn and Targhūn.

75 Tate 1977, 244. The main one, Karkū Shāh, was in the northern delta.

76 Rawlinson 1873, 274.

77 In the northern delta.

78 Tate 1977, 196–197.

79 One of the tribes living in the Hauzdār and Ram Rūd area was the Ramrūdi. The -i at the end of the word is the suffix of the attributive adjective which attributes the people to a certain place. Their descendants are still living in Sīstān and have the same surname.

seat of government more than 1000 years ago, are in the northern delta.⁸⁰ So, it is reasonable to infer that during the first centuries after the Arab invasion (7th century) the southern delta was inhabited. In the 14th century when Timur⁸¹ entered Sistan, Rūd-i Biyābān was also populated and well cultivated. We do not have any information whether any abandonment of sites due to lack of water occurred during these periods until the last centuries of the Safavid era (16th and 17th) when water was available in the southern delta. *Ehya Al-Moluk*, which was written during the first half of Shah Abbas I's reign (1587–1629), gives good information on Sistan especially during the end of the 16th and beginning of the 17th century. The author, who was from Sistan, knew about this region and its people, cities, villages, rivers, dams and canals. He named the settlements around the southern delta in different parts of the book. It is clear that in his time water was available in the Rūd-i Biyābān and that places like Tarākun or Targhūn, Ram Rūd, Kunder, and Hauzdār were populated.

We should bear in mind that in addition to Zoroastrianism, Sistan has a very strong connection with the Iranian national epic Shāhnāme, in which Sistan is also referred to as Zābolistān. According to this book, Rostam, the most famous national hero of all Iranian mythology, and his family come from Sistan. He enthroned the Kayānīd dynasty in Iran. For a long period during Islamic time the rulers of Sistan, Molūk-i Sīstān, had the title of Kayānī. The main hero in Avesta is Garshāsp,⁸² but in Shāhnāme the main hero is Rostam, a distant descendent of Garshāsp. The close connection between Iranian myth, epic and history in Sistan led to the belief that Sistan was founded first by Garshāsp.⁸³ In today's Sistan there are still places which got their names from the Iranian mythology and heroic characters. Jū-ye Garshāsp⁸⁴ was a canal named after Garshāsp to convey the idea of antiquity. According to Rawlinson,⁸⁵ by building a dam in the Rūdbār in very early times, this large canal was taken from the left hand of the Helmand River about 50 miles in length in higher elevation side by side of the main stream to Band-i Kamāl Khān.⁸⁶ From where the Helmand changes its course from west to north, the water flowed into the Rūd-i Biyābān (see Fig. 6).

Hauzdār canal, the course of which is still quite visible,⁸⁷ irrigated the lands of Machi to the east of Hauzdār, those around Kunder, and the City of Rustam to the south of Kunder.⁸⁸ Tate⁸⁹ believes the time of Fath Ali Khan (1692–1721)⁹⁰ is when the last change occurred in the Helmand's course.⁹¹ The narrow outlets of

80 It is about 20 km south-west of Nād Ali and 13 km north-west of Khawgah/ Khwābgāh.

81 Timur-i-Lang, "Timur the Lame", or Tamerlane.

82 *Avesta, Kərəsāspa*.

83 *Tārīkh-i Sīstān*, 1; *Ehya Al-Moluk* 5, 23.

84 It is also called Jū-ye Kohnah.

85 Rawlinson 1873, 278–79. He also quotes M. Ferrier, General Pollock, Major Lovett, Bellew, and Beladheri.

86 In my opinion, even the prehistoric bed of the Helmand River might be under this canal.

87 On the road from Zābol to Zāhedān, these canals can be seen from Hauzdār to Tāsūki which was cut by the road.

88 An ancient tower of silence can be seen near the City of Rustam which indicates the prosperity of this area in pre-Islamic and early Islamic times.

89 Tate 1977, 161.

90 Malik of Sistan at that time.

91 At the end of the Safavid dynasty, which at that time was weak, the Afghans conquered Kandahar and massacred the Persian forces. The Afghans gradually pressed down the

Fig. 5. District of Rām Rūd and Hauzdār (after Rawlinson 1873). Courtesy Royal Geographical Society.



the Rūd-i Biyābān were blocked by silt; and the channel bed, raised by the same process as the base level of the Helmand, shifted to a lower position towards the north. The Ram Rūd district was abandoned during the first half of the 18th century; and later, possibly during the second half of the 18th and start of the 19th century, Hauzdār and Machi⁹² were abandoned; the populations of these districts moved to Sekūhe (*Sakva*) after despairing of receiving water through the southern delta. It is worth mentioning that in those days, as Tate points out, 1000 to 1500 men were engaged in agriculture in the Tarākūn delta westwards. In this way, Tarākūn and Hauzdār were deserted without any hope of being watered in the near or even distant future, because those cultures no longer exist and the fertile soil has been taken away by the strong wind of the past few centuries.

Conclusion

The author of *Tārīkh-i Sīstān* says: “The prosperity of Sīstān is based on three dams: the dam of water, the dam of sand, and the dam of corrupters. Whenever these three dams are built, no place in the world is equal to Sīstān for comfort and affluence. As long as they were operating, it was like that and as long as they are operating, it will be like that and will have long-lived age.”⁹³ From the time we have any evidence, life in Sistan has depended on the Helmand River. When there was no water, the wind took over and buried human settlements

Helmand valley, driving the Persian population towards the delta while damaging the weirs and canals that were vital for Rūd-i Biyābān.

92 As Malik Bahrām Khān Kiānī, the great-grandchild of Fath Ali Khan, tried to revive there, but finally failed (Tate 1977, 167).

93 *Tārīkh-i Sīstān*, 11.

and blocked the river's deltas, making them ready for diversion and flood control. In fact, over the course of time, from antiquity to the present, the river and its canals shifted course, and in such changeable conditions of drainage the situation for inhabitants was bound to be unstable. Therefore, people had to follow the river, as was the case with the Helmand. The latter has two deltas at its end in Sistan: the northern delta and the southern. It appears that the Helmand had been flowing to the northern delta; and the shift in its channels, in combination with the windstorms over this main and large delta, caused the abandonment of the settlements and led to the founding of new ones around the same delta. The situation in the southern delta was totally different. Two natural and human factors played the main roles in the flourishing and deteriorating of this delta. Most probably, climate change at the end of the 3rd millennium BC caused low precipitation in the Hindu Kush Mountains. The Helmand River and Lake Hāmūn dried up, and the oldest Helmand civilization, i.e. Shahr-i Sokhta, collapsed. The river and channel beds became blocked with silt and sediments, and they were eventually buried under a layer of wind-blown sand, a result of the harsh NW gusts. More fieldwork is needed in Afghan Sistan, which comprises two thirds of the whole of Sistan, in order to find probable settlements to fill in the gap in the southern delta after the collapse of Shahr-i Sokhta and its satellite villages. For several centuries water flowed to the north through another bed, lower than Rūd-i Biyābān. After a long period of drought – we do not know how long – the river flowed again into the southern delta with the help of human activities such as building dams on the head of the river and letting water into a canal higher than the main river bed. But, obviously, the amount of influx water in the southern delta never reached the same quantity it had in the time of Shahr-i Sokhta. The environmental situation, as well, did not change back to what it had been earlier. The size of the population did not grow, and people from different tribes were scattered in different village-like settlements. The idea of urbanism did not appear again. In addition to a great amount of labour, central administration was vital for controlling and maintaining the irrigation systems that extended more than a hundred kilometres throughout the area, but after the partition of Sistan the southern part of the Sistan plain was also divided. The Rūd-i Biyābān delta with its fertile lands, without water resources, became part of Iran, and the Rūd-i Biyābān itself, which was also dry but had the possibility to receive water from the Helmand, became part of Afghanistan. The Afghans do not care about the Rūd-i Biyābān delta, and they are also building a dam to divert extra water to Gaud-i Zireh. So, there is no hope for the revival of settlements in the southern delta, but now the question is: What is going to happen to the northern delta?

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8. Concepts of the City-State in Ancient Greece

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ABSTRACT

The ancient Greeks, spread over a vast part of the Mediterranean and Black Sea regions, were culturally united by the Greek language, the mythology, the pan-Hellenic games, and the pictorial language. In contrast to the empires in the Mediterranean world the Greeks had no state or central power, no religious dogma, and no common chronology to organize their history around. Owing to these circumstances and with the rise of the national states, the city-state, or polis, came to be the unit which historians could identify with their own societies and focus their historical writing on. Moreover, Greek history has been shaped to be part of the history of Europe and has not been perceived in a broader Mediterranean context. This is particularly valid for the period when we have written sources, starting c. 700 BC, and thus a sense of Greek culture as being unique and having developed independently of the surrounding world was created. This relates to our claim that ancient Greece was the cradle of Western thought and civilization.

The ancient concept of 'polis' is multifaceted and can be seen as equal to a town, to a state, to its citizens, to a political community, and to a society. According to Aristotle, the polis is a natural phenomenon, and it is necessary to satisfy the natural desire of human beings for a happy and noble life. The polis was far from the only kind of societal organization in ancient Greece; several kinds of public organizations co-existed over time. Leagues and confederacies constitute associations above the polis level, and for the individual city-state the benefits of membership of such an alliance were increased safety and a stronger position when dealing with the powers outside the league.

Another way of pooling one's resources was to merge two or more individual poleis into one, through *synoikismos*. This was conducted for instance by the island city-states of Rhodes and Kos. Each of the original public organizations was constituted by three independent poleis, but owing to external political and military pressure on these societies they decided to cope with the challenges by merging together – Rhodes in 408/07 BC and Kos in 366/65 BC. In both cases this was done by founding an entirely new capital. Through these *synoikismois*, the economic and public resources such as military undertakings were strengthened and are thought to have been more effectively utilized. Obviously the Greeks intentionally enlarged their societies, and they concentrated administration and political power to the capitals. Additionally, in areas with frequent droughts and earthquakes the politically stable and economically strong poleis were better fitted to survive.

Introduction

For several reasons the Greek city-state, or polis (poleis *pl.*), has come to be the hub around which ancient Greek history is perceived and written. The polis in its capacity of public organization has also been equated to our modern national states – linked to the concepts of freedom and democracy. In this reasoning the dichotomy between West and East is present. In this chapter three themes will be outlined: I) the focus on the polis in Greek historiography and the Eurocentric perspective; II) an account of different kinds of societal organizations in the ancient Greek world; and III) a case study of the synoikism on the island polis of Kos.

Greek historiography and its focus on the polis

Research on ancient Greek communities in general and on poleis in particular has mainly focused on their emergence, territorial extension, public organization and degree of dependence – the latter politically as well as economically. However, the polis was far from the only kind of societal organization in ancient Greece; several kinds of public organizations co-existed over time and all of them did not follow the pattern of evolution from the merging of small undeveloped villages to multifaceted poleis. In spite of that, the polis has been perceived as constituting the final glory of public organization through evolutionary development.¹ Moreover, in the ancient history writing a more or less explicit idea has been present, namely that of rise and development, flowering, decline and fall. This idea is formed by analogy with the protracted traditional view of the historical periods: the Archaic c. 700–480 BC (forerunner); the Classical, c. 480–330 BC (Golden Age); and the Hellenistic, c. 330–30 BC (decline).

The ancient Greek people, geographically spread throughout the Mediterranean region and around the shores of the Black Sea, were culturally united by the Greek language, the mythology, the performance of various cult ceremonies, the pan-Hellenic games, and the pictorial language (Fig. 1). In contrast to the empires in the Mediterranean world (Egypt, Mesopotamia, Persia, the Hellenistic kingdoms, and later Rome), the Greeks had no state or central power, no central sanctuary or religious dogma, and no common chronology to organize their history around. Owing to these circumstances and with the rise of the national states, the polis *per se* came to be the unit which early modern and modern historians could identify their own societies with and thus centre their historical writing on.² This in turn led to that the plurality of these polis societies came to be homogenized.³ Moreover, Greek history has been shaped to be the history of (Western) Europe and has not been perceived in a broader, more natural, Mediterranean context. Through this process, which is especially valid for the historical periods, a sense of the Greek culture as being unique and having developed independently of

1 New perspectives on political and societal organizations other than that of the polis, as well as on the relation between city and hinterland, have been adopted in the last years. See e.g. Gehrke 2000; Brock & Hodkinson 2000; Morgan 2003; Kolb 2004; Vlassopoulos 2007.

2 Vlassopoulos 2007, 13–67, gives a thorough and pedagogic overview of the invention and development of Greek history writing from antiquity until today.

3 Vlassopoulos 2007, 4.



Fig. 1. The general distribution of Greek poleis during the Archaic and Classical Periods. Map by Daniel Löwenborg.

the surrounding world was created. This is in spite of the fact that the Greeks lived scattered over a wide area and came in contact with a number of different peoples and regions. As for a more holistic approach, recently some scholars have made efforts to integrate the ancient Greeks into a broader perspective.⁴

With regard to the public organization of the polis, it did not constitute a homogeneous entity but instead showed a plurality of different constitutional patterns.⁵ This is also valid for the internal as well as external political and historical development in the Greek world which took different paths and did not follow the same line of development. Classical Athens, an anomaly with regard to its size and abundance of sources, has long constituted a norm by which all Greek societies and periods are wrongly measured against.

One reason that modern scholars have devoted more attention to the polis than other forms of organizations is that it is easier to define, as the poleis defined and advertised themselves and were large in number. Another reason is that the polis is easier to find in the sources, both in archaeological and literary sources. In addition, the important contribution by the philosopher Aristotle (384–322 BC) on political theory has had a major impact on modern studies in the fields of both political science and ancient history. But the particular interest in the polis organization and its nature is, as previously mentioned, also because the Greek polis organization resembles our own national states, which makes it easier for us to understand its possibilities, problems and workings. For instance, ancient Greek democracy has been thoroughly studied in order to solve problems in our

4 E.g. Horden & Purcell 2000.

5 Brock & Hodkinson 2000, 21; Peter Rhodes 1997 has, together with the late D.M. Lewis, thoroughly collected evidence (mainly epigraphic) for and commented on different kinds of government in ancient Greece.

own time. The urban centres, in which political, economic and cultural institutions were gathered, have also received more interest than the polis in its entirety. Rightly or wrongly, this searching for origin and similarity – and sometimes continuity from antiquity to our own time – is strongly related to our claim that ancient Greece was the cradle of Western thought and civilization; that is, we take a Hellenocentric and a Eurocentric perspective. A corollary to this view is the idea of the free and democratic West versus the despotic and authoritarian-ruled East.⁶ The tradition of West and East as opposites was invented and nurtured already in antiquity, starting with the outcome of the Persian Wars c. 500–479 BC.⁷

However, one unavoidable problem when criticising the standpoint of the freedom-loving Greeks (although it is neither desirable nor necessary to make the polarisation), is that we *are* provided with numerous sources that bear witness to the enormous interest in freedom. *Eleutheria* (freedom, liberty) is an early word, appearing already in Mycenaean documents of the 13th century BC. *Eleutheria* has a broad meaning and its opposite is *douleia* (slavery). *Eleutheria* as well as its cognates occurs frequently in Greek inscriptions and literary texts, which reflects its central importance to the Greeks.⁸ It designates not only freedom from a superior power (internal or external) but also being freeborn, not being a slave, and it is linked to the manumission of slaves.⁹ The cult of Zeus Eleutherios is intimately connected with the freedom of a community. This cult had a political origin and began as a ‘democratic’ manifestation, protecting the community from tyrants, but it also came to imply the individual city’s fortune in the field of international relations.¹⁰ In Samos, for example, the founding of the cult to Zeus Eleutherios is dated to 479 BC and obviously associated with the liberation from the Persians.¹¹

A recent and interesting approach to Greek polis-culture is to study the *idea* of the polis in ancient literary sources. Many of these texts deal with utopias used in two ways: 1) utopias as mere fantasies, placed in the past; 2) utopias as ideal communities (past or future) which can help to reform existing poleis and form new ones.¹² The historical imaginary polis is glorified in the sources, and the polis is thought of as an important step and ultimate phase in human civilization,¹³ another factor which has influenced historians of all times. These and other similar studies may increase our possibilities to gain some insight into the urban mind of the ancient Greeks.

Ancient Greek public organizations – from Aristotle to Mogens Herman Hansen

To bring out the presence of the various and often elusive kinds of societal organizations, they will be treated briefly in this section. These organizations consist

6 Vlassopoulos 2007, 3f.

7 Bridges *et al.* 2007. This work treats the invention of the tradition of and the cultural responses to the wars between the Persian Empire and the mainland Greeks from antiquity until today.

8 The freedom of the Greeks of Asia is an old concept already present in Herodotos.

9 Numerous inscriptions give evidence of manumission of slaves. See e.g. *TCal* 167–211.

10 Quass 1979, 46.

11 Raaflaub 1985, 125–147, spec. 139f.

12 Hansen 2005, 9–11.

13 Hansen 2005, 14f.

of villages, cities, poleis and their subdivisions, and unions such as *ethne*, leagues and confederacies. In addition, demographic aspects will also be mentioned. The public organization of a society or community is usually defined by its territory or population through which the 'state' or political unit, whether small or large, is administrated and conducts its concerns.¹⁴ With regard to ancient Greece, the boundaries between the units discussed below are not always obvious; on the contrary, they often overlap or are fluid and the different definitions per se are ambiguous.

Villages, that is, smaller rural settlements, are in contrast to urban communities tied to the cycle of agricultural life. The village is especially interesting since historically it is considered to have "been ruled by the primitive democracy of face-to-face discussion in the village council or by a headman whose decisions are supported by village elders or by other cooperative modes of government."¹⁵ With an increase in population, such societies changed from being kin-bound to being differentiated and hierarchically organized.¹⁶ In Greece, villages co-existed with the towns within the polis organization. Aristotle considers the village, *kome*, to be an extension of the household, *oikia*, and a *polis* is made complete through the union of several villages (*Pol.* 1252b17; 28).

*Cities*¹⁷ either came into being through an increase in population, as mentioned above, or through a process of *synoikismos*, which was the origin of, for example, Athens. The causes of urbanisation in ancient Greece seem to have been connected with the revival of overseas trade, beginning in the 9th century BC, which resulted in increased wealth. Likewise, the development of the iron industry contributed to an economic surplus. Elsewhere in the world, autonomous genesis of urbanisation is attested to in China, in India, in the Near East (the Fertile Crescent), in South and Mesoamerica, and in Africa south of the Sahara.¹⁸ Characteristic of the city was a growing centralisation of power, an economic surplus which in turn generated commerce and trade, class distinctions owing to division of labour, military organization, and systematic exploitation of slave labour whose work enabled large-scale projects such as irrigation, fortification and royal architecture.¹⁹ Owing to the growing wealth, such cities extended their power into the countryside and became centres of early empires. The same basic characteristics are also valid for ancient Greece, but the urban development during the seventh and sixth centuries BC took another direction: the polis emerged.

Greek cities and towns, most of which were fortified, had at their centre an

14 Essentially the definition given by Jones 1987, 1.

15 Heslop 2003.

16 Heslop 2003.

17 'Town' and 'city' denote an urban centre. They are often used interchangeably, but strictly speaking a town is smaller in size than a city. Consequently, urban centres in ancient Greece *should* be called towns, although they are often called cities.

18 Hansen 2000a, 11; a different variety of urban development in the ancient Near East is presented in Aufrecht *et al.* 1997; urbanism in the Greek world is discussed in Owen & Preston 2009.

19 Heslop 2003; Max Weber singled out five characteristics of a city community: a defence circuit, a market, laws and law courts, political decision-making, and at least partial autonomy. 'Die Stadt. Eine soziologische Untersuchung', in *Archiv von Sozialwissenschaft und Sozialpolitik* 47, 1921, 621–772, referred to by Hansen 2000a, 11f, and n. 18. Hansen prefers a more extended model, partly based on Gordon Childe.

open space called the *agora*. The agora was a market place where trade and commerce were conducted, and it was also the centre of the political and judicial bodies with associated buildings. A Greek city had a theatre which also housed the monthly assembly meetings. Several temples and *gymnasia* were standard. Although rural dwellings were fairly common, many farmers preferred to live within the urban centres.

Poleis.²⁰ The word 'polis' was used by the Greeks themselves. The English-language term 'city-state' originated in England in the late 19th century and has come to be used especially for cities in ancient Greece.²¹ The Copenhagen Polis Centre (CPC), under the leadership of Mogens Herman Hansen, has since 1992 been in the process of producing an inventory of the Greek city-states during the Archaic and Classical periods. Their focus has been on how the ancient Greeks perceived themselves and presented their poleis, a study based on various archaeological and written remains. The investigation indicates that the number of poleis during the period examined is as high as 1035, half of which were situated in Hellas (i.e., Greece proper, the islands, Macedonia, Thrace, and the west coast of Asia Minor, Fig. 1).²² Most of those in Hellas had grown spontaneously, but some were the result of synoikism. Noteworthy is that every fourth of these 1035 poleis were founded by colonization.²³ Hansen points out that the size of Greek city-state culture, as compared to others, was extraordinary regarding the extension in time (approx. 1000 years) and space (Mediterranean and Black Sea regions) as well as the number of poleis (approx. 1000).²⁴ However, city-states were not exclusively a Greek phenomenon. They were found in different parts of the world, as is clear from the huge volume, *A Comparative Study of Thirty City-State Cultures*.²⁵ Chronologically, the city-state was a common form of 'state' in prehistoric, ancient and medieval times, and there are even modern examples such as San Marino, Monaco and Andorra.

What is a polis then? In a fundamental physical sense, a polis is a settlement, constituted by a town, *asty*, with a fortified hilltop, *akropolis*, and the surrounding countryside, *chora*. All three terms were also used separately and synonymously with polis, but in different senses. Used synonymously with *asty* the term 'polis'

20 The research on the ancient Greek polis is, to say the least, huge, and during the last decade it increased with (among others) the enormous contributions by the Copenhagen Polis Centre.

21 The term 'city-state' was probably first coined by William Warde Fowler in his book, *The City-states of the Greeks and Romans*, Oxford 1893. In fact, it is a translation of the German word 'Stadtstaat', which was used to describe the Roman concepts *res publica* or *civitas*.

22 In the concluding, comprehensive publication of the Copenhagen Polis Centre, the total number of poleis in the Archaic and Classical periods is estimated to a maximum of 1035. It is stressed, however, that all poleis did not exist at the same time and that the number of poleis in any one year cannot have surpassed 1000, Hansen & Nilesen (eds.) 2004, 53f. In earlier publications of CPC the number of poleis has reached approx. 1500.

23 Greek colonies should not be confused with our modern conceptions of 'colony' and 'colonization'. They constituted sovereign units, i.e. they were new-founded poleis with their own constitution, laws, cults, etc., and were not dependent on their mother-cities.

24 Hansen 2000b, 141, 171.

25 Hansen 2000a, 2000b. Followed in 2002 by *A Comparative Study of Six City-State Cultures* (Historisk-filosofiske Skrifter, 27), Copenhagen.

denotes an urban centre;²⁶ used synonymously with *akropolis* it denotes a stronghold and/or a hill-top settlement;²⁷ and used synonymously with *chora* it denotes town *and* hinterland.²⁸ But a polis is also a community, made up of the people living in it. Hansen points out that this distinction was made in antiquity and that the polis was also defined as to the type of community: a political community (Arist. *Pol.* 1274b71, 1276b1–3). In the political sense a polis was synonymous with its citizens, *politai*, with the assembly, *ekklesia*, or other bodies of government, and with *koinonia*, a political community in a more abstract sense.²⁹ Thus, the ancient concept of ‘polis’ can be understood as equivalent to a town, to a state, to its citizens, to a political community, and to a society. According to Aristotle, the fundamental thought is that the polis exists by nature; that is, it is a natural phenomenon, and it is necessary to satisfy the natural desire of human beings for a happy and noble life.³⁰

In the late 1990s, J.K. Davies pointed out that the use of the term ‘polis’ “represents a compound of different chronological layers denoting a variety of settlements and polities.” In order to do full justice to the entire range of ancient Greek polities, he promotes the use of the term ‘micro-state’ instead of polis, which also includes non-polis polities.³¹

It goes without saying that neither of these societal organizations reached a definite and theoretically ideal form, but changed and developed in various ways over time.

Polis subdivisions consisted of tribes, *phylai*, and municipalities, *demoi*, and it was also to this level of the polis that the villages, *komai*, belonged. Outside Athens, at least eight other denominations of territorial units equal to *demoi* are attested to.³² These local unions had and managed their own institutions – political, juridical, legislative, cultural and religious – and despite being members of and subordinated to the polis, they were fairly independent on this level. Some scholars have drawn attention to the role of the inhabitants in the demes. Through these studies it has been shown that citizen-women and resident aliens (*metoikoi*) had prominent public functions on a local level.³³ Thus, the boundary between citizen and non-citizen, as well as between man and woman, may not have been as rigid as usually assumed.

Demographic aspects of the polis. Numerical data, estimated or stated in the ancient sources, should be treated with caution. Nevertheless they provide a frame of reference that can be used to make comparisons when considering the size of individual poleis. As for the size of a polis, two factors are involved, namely population and size of territory. With regard to *population*, ideally all adult male citizens (not all inhabitants) should be able to know of one another. A small polis had

26 E.g., *IPriene* 1,6; Thuc. 1.10.2.

27 E.g., Hom. *Il.* 4.514; Thuc. 2.15.6; *IG* IV,2, 492,3; *IG* XII,9, 196,8–10.

28 Xen. *Hell.* 5.4.49; Hansen 1997, 15, ancient sources nn. 30–32.

29 Hansen 2000b, 152.

30 Simpson 1997, xxivf.

31 Davies 1997, 27. On the concept ‘state’ applied to ancient Greek poleis, see Hansen 2002b.

32 Jones 1987, Index I, B2; 1999, 68f.

33 Jones 1999; Cohen 2000.

1–2000 citizens and a large 10000.³⁴ Plato, modelling on the ideal polis, was of the opinion that 5040 (sic!) citizens was an optimal number (Pl. *Leg.* 737E–738B; 771A–C). Aristotle, on the other hand, thought this was too large a number since it would require the territory of Babylon to feed them (*Pol.* 1265a13). According to him, a city that is too large is not possible to govern well (*Pol.* 1326a25).

Demographic studies of ancient societies are crucial, giving rise to disputes among scholars. Olynthos, a polis that is described as large in ancient texts,³⁵ has on the basis of the reconstruction of the grid-plan of the city been estimated to have had an urban population of some 6000 after the new foundation in 432 BC, in which both the old and the new town were enclosed by a new circuit wall. After 379 BC a suburb was built outside the eastern wall, and the town may then have had close to 10000 inhabitants.³⁶ As for the polis of Athens, Hansen in the 1980s calculated that in 431 BC a total of 47000 male adult citizens lived in Attika,³⁷ and in the period c. 350–322 BC, for which the sources are more sufficient, the figure is 30000.³⁸ Considering the total number of people living in Attika in the fourth century, Hansen finds the figure 200000–250000 probable.³⁹ As for the Delian League, whose members were obliged to pay annual tribute to Athens, Ruschenbusch in the 1980s made an estimate of the number of citizens and the total population of each polis based on the size of the tribute, the area, and the population in the late nineteenth and twentieth centuries.⁴⁰ Although it is only a matter of *estimates* it gives an indication of the number of inhabitants and citizens of individual poleis.⁴¹ A common basis of calculation for estimating the total population in an ancient Greek society is to multiply the (estimated) figure of adult male citizens by four.

Another source which points to the relative size of different poleis is the decrees enumerating the supply of corn for Greek cities owing to shortage. In one such decree Kyrene, during the well-known famine of c. 330–326 BC, supplies corn to 43 cities or tribes in mainland Greece and the islands.⁴² For comparison it should be mentioned that Athens received 100000 *medimni*, Rhodes 30000, and Kos 10000.⁴³ Disregarding methodological doubts concerning demographic

34 Hansen 2000b, 155, 172; fourth-century Korseia on the island of Keos had an estimated population of about 1,300 (*IG* XII,5, 609).

35 According to Diodoros (32.4.3), Olynthos had 10000 inhabitants (*pólin myriadron*).

36 Hoepfner & Schwander 1994, 72; Hansen 2000b, 156. Hansen rejects the estimate by Busolt 1963 (1920), 168, who reckoned more than 10000 adult male citizens.

37 According to Ruschenbusch 1994, 190f, the number of (male) citizens in 431 was 60000.

38 Hansen 1988, 14–28, esp. 25.

39 Hansen 1988, 7–13, esp. 12.

40 Ruschenbusch 1983.

41 However, one important objection to Ruschenbusch's method is that the size of tribute could have been based on the wealth of the individual poleis and not on the population. Nixon and Price 1990, 43, who also studied the Athenian Tribute Lists with regard to the size of the contributing poleis, are of the opinion that the size of the contributions is connected to the assets of the poleis and not to the size of the population. They examine the size of the tribute in the year 441 and conclude that 71% of the members paid 1 talent or less, that is 55 out of a total of 407 talents, which indicates that the majority of the city-states were small and/or had poor resources.

42 *SEG* 9:2.

43 Tod 1948, 196, listed the receiving communities alphabetically. He commented that the total amount of 805000 *medimni* probably was of the Aeginetan standard, equivalent to 1207500 Attic *medimni*. One Attic *medimnos* is roughly equal to 54 litres.

studies of ancient societies, we get an *idea* of the relative size of certain poleis and thereby an impression of their personnel capacity and needs.

Territory is generally considered to have been a less important concept in antiquity than today,⁴⁴ but the use of exile as penalty, the existence of rural fortifications and boundary markers, as well as the frequent territorial conflicts and warfare, indicate the opposite.⁴⁵ Most poleis were small; many had a territory of 25 km² or less, and only a few had a territory of over 500 km². For instance Athens (with the *chora* Attika), one of the largest poleis, had a territory of 2500 km²; and the smallest polis, the island of Belbina, had an area of only 8 km².⁴⁶ However, the determination of ancient territories must be seen as approximate except regarding island states.

Ethne.⁴⁷ As already stressed, it is largely owing to the impact of Aristotle's works on political theory and his emphasis on the polis, as well as to the modern scholarly preoccupation with the polis, that we have a somewhat distorted picture of Greek public organizations. In ancient Greece other kinds of communities co-existed with the polis, and one of the most important was the *ethnos*. The definition (or definitions) of *ethnos* is even more difficult and ambiguous than that of polis, but the main characteristic of the *ethnos* was its extended geographical area. In the *Politics*, Aristotle uses the term in different ways. Firstly, he applies it to territorially large communities such as Arkadia (1261a28) and Babylon (1276a29). Secondly, when dealing with the political community in general, he places it side by side with the polis (1284a38; 1285b30, 33; 1310b35). Thirdly, he uses it to describe a city which is made up of too many people and thus is impossible to govern, since it is not easy for a regime to exist among an excessive number (1326b2–5). Fourthly, when discussing the characteristics and behaviour of people living in areas outside Greece (1327b23), as well as the differences in display among the Greeks (1327b34), *ethne* is used to denote people and/or nations.

According to Larsen, the Greeks classified their states into two groups: city-states and tribal states, *ethne*. In the latter group federal states were included. Federal states, however, were normally a sympolity or federation of city-states that had developed from a tribal state. Furthermore, it was possible for a tribal state to develop a strong government and still retain its tribal organization.⁴⁸ *Ethne* were located in particular regions in the Greek mainland, for example in Achaia, Arkadia, Macedonia and Thessalia, but there were also geographically dispersed *ethne* or *pseudo-ethne*, such as the Dorians and Ionians.⁴⁹ Moreover,

44 Hansen 2000b, 172.

45 For instance, the protracted territorial conflict between Samos and Priene, attested from the 590s to 130s BC.

46 Hansen 2000b, 155.

47 Recently, scholarly attention has been drawn to this and other kinds of political/social organisation. See Brock & Hodkinson 2000, introductory section in pp. 21–25, and the second part of the book, *Communities beyond the polis*, ch. 11–19; Athens is perceived not as a polis but as a nation by Cohen 2000.

48 Larsen 1968, 3f.

49 Brock & Hodkinson 2000, 21, with ref to R. Parker 1998. *Cleomenes on the Acropolis*. Oxford, 19. According to Parker one sign of this attitude is that the Dorians and Ionians were included among the *ethne* represented within the Delphic amphiktyony.

polis communities could develop and exist within *ethne* without losing their affiliation to a common ethnic or regional identity.⁵⁰

*Leagues and confederacies*⁵¹ have in common that they constitute associations above the polis level, and the main reason behind the formation of alliances between Greek poleis was the endemic waging of war. In response to warfare numerous more or less lasting treaties of *symmachia* or *epimachia* were concluded, and when not freestanding, such a military or defensive alliance was also an integral part of the more comprehensive interstate associations. The increase in the number of alliances in the Hellenistic period may be a response to the pressure from the Hellenistic kings (although in some cases the initiative came from the monarchs themselves). However, it is difficult to gain an understanding of the nature of and differences between inter-poleis associations. Modern notions and use of the terms are ambiguous and/or indistinct. Larsen understands the unions as follows: 1) *Ethnos* was first used about tribal states, but later the term also included federal states. *Ethnos* could be applied to a tribe or a nation even if it was not a 'state'; however, when there is evidence for action by the *ethnos* of, for instance, the Lykians, we can assume that a tribal or federal state was in action. 2) *Koinon* was even more loosely used. It could signify federal states or governments, but was also used about every kind of association. Therefore, the mere use of an expression such as 'the *koinon* of the Macedonians' does not necessarily mean that a Macedonian state was in existence. 3) *Sympoliteia* was, according to Larsen, adopted to denote a federal state in a more precise way, but it was also used about the merging of cities. In addition, the term was also used for any kind of citizenship, equal to *isopoliteia*.⁵²

In cases of clearly defined leagues, such as the Aitolians and the Achaians and also the federation of Boiotia, each one had an assembly open to all citizens as well as a *synedrion* (council) which was composed of representatives of the cities. The individual cities retained local autonomy.⁵³ However, it is important to point out that there were two sides to being a member of an alliance. For the individual city-state the benefit of membership of an alliance was, of course, increased safety and a stronger position when dealing with the powers outside the league. But this advantage also had a cost. Hansen has several times pointed out that in the Classical period the leagues were increasingly dominated by the hegemonic poleis, that is by Athens and Sparta, and that their members were reduced to dependent poleis without *autonomia*.⁵⁴ Walbank, however, was of the opinion that

50 Brock & Hodkinson 2000, 22.

51 Though *amphiktyonies* are important, I refrain from mentioning them in the text. They were political, military and religious associations, located at the common sanctuary away from the territory of its most powerful members. A connection with *ethne* is evident since some of the *amphiktyonies* comprised the prime vehicle for the shared identity of most *ethne*. See Brock & Hodkinson 2000, 26f.

52 Larsen 1968, *ethnos* and *koinon* 8, *sympoliteia* xv, 8, 199, 203, *isopoliteia* 202f; Rhodes 1993, 175, n. 101, points out the distinction made by modern scholars between *isopoliteia* and *sympoliteia*. When *isopoliteia* was agreed between two states that intended to remain separate and independent, the citizens of each could exercise the citizen rights in the other whenever they were there. *Sympoliteia* (= *synoikismos*) was the merging of two or more poleis into one. The ancient use of the terms, however, is not as clear-cut; for a thorough study on the *koinon* in capacity as a federal state, see Beck 1997.

53 Rhodes 1993, 175f.

54 Hansen 2000b, 170f.

the leagues of the Hellenistic era, transgressing the limits of the old ethnic-based union, “enabled small and weak states to play a significant role.”⁵⁵

Synoikismos: the example of Kos

Another way of pooling one’s resources was by merging two or more individual poleis into one, through *synoikismos* (moving together). *Synoikismos* in a strict sense means that communities relocate either to a new-built settlement where they merge together, or that one or more communities relocate to a pre-existing settlement where the immigrants merge with the inhabitants.⁵⁶ Such radical re-organizations of society involved not only poleis but also subdivisions of poleis. In some cases the relocation could be the result of war, when a larger polis conquered a smaller. All relocations did not last forever; in some cases a polis which had lost its status could be re-founded later.

A certain form of *synoikismos* was experienced by the island city-states of Rhodes and Kos. In each case the original public organization on these islands was constituted by three independent poleis, but owing to external political and military pressure on these societies, they decided to cope with these challenges by merging together – Rhodes in 408/07 BC and Kos in 366/65 BC. In both cases this was made possible by founding an entirely new capital. On the island of Rhodes, the poleis of Ialysos, Kamiros and Lindos lost their status, and a new polis and a new capital, Rhodes, were founded. This enlarged polis came to play a prominent role, not the least in the Hellenistic period,⁵⁷ and together with Pergamon it should be seen as a local hegemony with considerable influence and power. The unification of the three poleis in Rhodes, however, was according to Gabrielsen a drawn-out process which was never fully completed.⁵⁸

On the island of Kos almost the same procedure was enacted; the poleis of Astypalaia, Halasarna and Kos Meropis merged together into the polis of Kos, and the capital was moved to Kos Meropis, with the new name Kos. This was undertaken after a period of internal discord that probably led to the outbreak of civil war in 366/65 BC, and the Koan society thus underwent a radical change in its socio-political organization. According to Strabo (Str. 14.2.19) the capital of the Koans was formerly called Astypalaia, but after a period of *stasis* the Koans moved to the present city near Skandarion and changed the name of it to that of the island, that is, to Kos. Diodoros (Diod. 15.76.2) does not give the reason for this migration; he merely reports that the Koans changed their abode to the city they now inhabit, around which costly walls were built as well as a considerable harbour. The territory of Kos was 290 km², and estimations of the population range between 9000 and 16000, depending on which sources are used.⁵⁹

55 Walbank 1976–77, 51.

56 Hansen & Nielsen 2004, 115.

57 Gabrielsen 2000, 177.

58 Gabrielsen 2000, 178, 195f.

59 An estimate of the population relative to that of other poleis in c. 330–326 BC can be gained from a list of corn, distributed by Kyrene to a large number of Greek poleis during a famine. Kos, like Aigina, Delphi, Elis and Paros, received 10000 *medimni* of corn, a third of the amount received by Rhodes. SEG 9:2; Sherwin-White 1978, 79f, with references to G. Oliverio 1933. *Cirenaica* 2:1, (*Documenti antichi dell’Africa italiana*). Bergamo; Herzog, in his attempt to explore the politico-military organization of the society in the early Hellenistic period, concluded that the body of citizens, which he placed on an equal scale

In the late third century Kos and the nearby polis island of Kalymna were involved in another kind of *synoikismos*. The territory of Kalymna, which included the nearby islets, is estimated to 93 km².⁶⁰ As for the size of the ancient population, Ruschenbusch estimated that Kalymna in the fifth century had approximately 1200 citizens and a total population of about 4800.⁶¹ Sometime in the period between 215 and 205 BC Kalymna was incorporated into the polis of Kos by a treaty of *homopoliteia*, 'community of citizenship'.⁶² The incorporation was decisive to the sovereignty of Kalymna as an independent polis. It is probable that the incorporation was advanced by Ptolemaios IV in an attempt to strengthen the alliance against the Kretans and Philip V.⁶³ In connection with an attack on Kos by Philip V in 201 BC, however, Kalymna is believed to have temporarily regained its independence from Kos⁶⁴ being in return controlled by Philip. This state of 'freedom' probably lasted for only four or five months, and the re-incorporation is referred to in a Koan decree which draws up the administration of the oath of loyalty of the new citizens to the *homopoliteia* and the Koan state.⁶⁵ The inscription reads as follows:

Stasilas, son of Lykophoron moved: two commissioners shall be appointed from each tribe who shall administer the oath to the citizens in the agora in front of the town hall, and also a scribe from each tribe and a man to dictate (the terms of) the oath; one commissioner shall be appointed to go to Kalymna (and administer the oath) with a secretary for them; they shall administer the oath where the general sent by the people instructs him; the sellers (*poletai*) shall farm out now the provisions for the citizens of two sets of sacrificial victims for the swearing of the oath here and in Kalymna; the sacrificial victims shall consist of a bull, a boar and a ram, all of them uncastrated; the citizens shall swear from the young men upwards, beginning with the presidents and generals; of the others those who are present (shall swear) before the commissioners who are being sent to Kalymna; the commissioners shall administer the following oath: "I will abide to the established democracy, the restoration of the *homopoliteia*, the ancestral laws of Kos, the resolutions of the assembly and the provisions of the *homopoliteia*; I will also abide by the friendship (*philia*) and alliance (*symmachia*) with King Ptolemaios and the treaties ratified by the people

with the cadre of soldiers, amounted to 9000, R. Herzog 1928. *Heilige Gestze von Kos*. Berlin, 42f; Ruschenbusch 1983, 143, on the other hand, suggests a more modest number. Considering the Koan tribute to the Delian League in the fifth century, which amounted to 5 talents (equal to that paid by Miletos), he estimates the body of citizens to 4000 and the number of inhabitants to 16000.

60 Hansen & Nielsen 2004 (eds), 743.

61 Ruschenbusch 1983, 142.

62 *TCal XII*, refers to the second and final incorporation in c. 200 BC. At least by the outbreak of the First Kretan War in 206/05 Kalymna was definitely part of the polis of Kos, which is confirmed by an honorary decree issued by the deme of Kalymna for Lysandros, the Kalymnian commander of a Koan squadron, who successfully defended Kos in a naval battle against the Hierapytnians in the First Kretan War c. 205/04, see *TCal* 64; Sherwin-White 1978, 124f; Höghammar 1993, 88.

63 Höghammar 1993, 88–93.

64 Sherwin-White 1978, 127.

65 The word is unique, occurring only in this inscription. A search in the CD-ROMs PHI#7 and TLG (now accessible on-line) shows that it is unparalleled in both Greek inscriptions and in Greek literary works.

with the allies; I will never set up an oligarchy or a tyranny or any other constitution apart from democracy, and if anyone else establishes (such a regime) I will not obey, but I will prevent (him) as far as possible, and I will not take over under any pretext any of the forts or the acropolis, whether for my own possession or in collaboration with someone else, and I will not allow the territory of Kos to be diminished, but I will increase it to the best of my ability; I will be a just judge and a fair-minded citizen, taking part in elections and casting my vote without favouritism, according to what seems to me to be the best in the interest of the people; all this is true by Zeus, Hera and Poseidon; if I abide by my oath may all be for the best; if I break it may the opposite happen." The [commissioners shall swear] at once in the [assembly] over [burning] victims [in accordance with the] resolution of the [assembly]⁶⁶

To judge from the text (the end of which is missing) there is no doubt that it was the Koans who dictated the conditions of the oath. Certainly the relations between Kos and the Ptolemies were cordial, but the clause on the provisions of *philia* and *symmachia* towards King Ptolemaios indicates some form of royal control over both islands.⁶⁷

This unique inscription also tells something about what it implied to be a citizen in a democratically ruled polis. The oath within the text constitutes a description of an ideal citizen and an ideal polis in which responsibilities are taken and shared among citizens. Loyalty to the state and its laws and constitution is, of course, demanded, and the oath is prescribed to be sworn individually to safeguard this. The individual citizen is also expected to partake in the assembly and in the courts to the best of his ability in an unselfish way and for the benefit of everyone. In ancient Greek society there was a fundamental expectation on individual citizens to participate actively in politics, and an essential principle was to rule and be ruled by turn, which in practice meant that you shared the burdens of the numerous one-year public duties as members of the council (*boule*) and as magistrates.

The relation to the hegemonies also played an important part. During the course of time, Kos had good relations with the Ptolemaic kings and later with the new superpower Rome. This, too, of course, was crucial to its survival. In 129 BC the province of Asia was established, which in the initial stage concerned the territory of Pergamon. Kos had together with Bargylia participated in a previous war against an enemy of Rome, and thus ought to have been in a favourable position with regard to Rome,⁶⁸ Kos is one of the few Greek cities that are thought not to have been incorporated into the new province until the reign of August-

66 *TCal XII*, Transl. Austin 1981, 133.

67 Bagnall 1976, 105. Since the short period during which Philip V separated Kalymna from Kos occurred in 201 BC, the king referred to must be Ptolemaios V. In 202/01 individuals attested as Kalymnians appear as Koan citizens in an extensive wartime subscription list, but the final absorption referred to in the *homopoliteia* decree, however, is likely to have taken place in 200, see Sherwin-White 1978, who discusses the evidence for this date in pp. 125–128.

68 Höghammar 1993, appendix 2.

tus.⁶⁹ In AD 53 Claudius granted the island *immunitas*, that is, they became free from taxes.⁷⁰

Too often the polis as a political institution or unit is incorrectly said to have lost its independence or even its existence in the Hellenistic era.⁷¹ The historical development took, partly because of international politics, dissimilar paths in different parts of Hellas. In spite of that, and if we assume that Roman hegemony put an end to the Greek cities' possibilities to pursue a policy of their own, the poleis and their political institutions continued to exist all the way into the Roman imperial era and pursued their affairs on a local level. The island polis of Kos, in particular, was long-lasting and could maintain itself culturally, economically and to some extent politically in world politics with shifting hegemonies all through the Classical and Hellenistic periods. As a result of the two *synoikismoi* (366/65 and c. 200 BC), the latter in which Koan territory extended to approximately 380 km², economic and public resources such as military undertakings were strengthened and are thus thought to have been more effectively utilized. Obviously the Greeks did not think that less is more, because they consciously enlarged their societies and concentrated administration and political power to the capitals. Additionally, in an area with frequent droughts and earthquakes, the economically strong and politically stable poleis (i.e. the democracies) were better fitted to survive. Another important factor to take into consideration is that Kos (like the successful Rhodes) was an island. Island states and island colonies – in antiquity and in later periods – are presumed to have more easily maintained autonomy and freedom from external restraint.⁷² As regards military and defensive matters, islands may have been easier to defend than mainland communities, many of which were situated close to the coast and thus vulnerable to attacks from both land and sea.

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69 Sherwin-White 1978, 139–141.

70 Sall. *Hist.* 12,61; Sherwin-White 1978, 146; Höghammar 1993, 32. This, however, was obviously made because of the close friendship between the emperor Claudius and his personal physician, the Koan Xenophon.

71 E.g. Runciman 1990.

72 Olauson 2007, has studied modern world-wide autonomous regions, i.e. autonomous minority groups in relation to their motherlands. Through quantitative and qualitative analysis he concludes that the majority of them are islands. The study of islands, nissology, is a relatively new and interdisciplinary scientific subject. Islands are by nature well defined and the inhabitants are thought to develop a stronger solidarity, a stronger sense of us and them than is evident in mainland territories. Factors important to the possibilities of autonomy include, according to Olauson, long distance from the mainland, different culture, and proximity to foreign country. Although not wholly applicable to ancient Greece, this study may provide some inspiration in the analysis of the status of island poleis.

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- PHI Packard Humanities Institute. Searchable Greek Inscriptions. <http://epigraphy.packhum.org/inscriptions/> (accessed June 12, 2010)
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9. Long-term Resilience: The Reconstruction of the Ancient Greek Polis of Kos after Earthquakes in the Period c. 200 BCE to c. 200 CE

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ABSTRACT

This chapter describes a recently started research project on the long-term resilience of an ancient Greek city-state. The first half of it outlines the goals, background and methodology of the project. The second part consists of a more detailed description of one of the basic source materials, namely the coins, with a presentation of some preliminary results of the analysis of one central coin issue.

Many of the towns and cities in the Eastern Mediterranean region have existed for thousands of years. Some of them were considered ancient already in antiquity and a large number were founded in the last millennium BCE. The project concerns the resilience of ancient cities when hit by natural disaster. As an example the author has chosen the polis (city-state) of Kos in the south-east Aegean, which, in three different periods during the 400 years between c. 200 BCE and 200 CE, was hit by devastating earthquakes. The author looks at political independence, type of constitution, local control of the economy and size to see whether these factors affect the ability of a society – in this case Kos – to reconstruct itself after a major disaster. At the beginning of the period under study Kos was an autonomous democratic state with a good economy. At the end of the period Kos was part of the vast Roman Empire; it was a small tax-paying community of no particular importance to the central government. Did the above enumerated factors have an impact on the resilience of a community? Which factors are most important – independence and self-governance with local control of the economy, or being part of a large empire with enormous resources but where decisions are made far away, the local, basic productive and economic capacity being the same? Does self-governance have an effect on how the population reacts to a catastrophe? Are people living in a democracy better able to rebuild their society after a disaster than people living in an empire or a monarchy with a top-down organization?

In the project the author combines Koan epigraphic, archaeological and numismatic sources from the three periods in question, links them to one another, presents contextualized and comparative interpretations of them, and discusses what they can tell us about the recuperative ability of Kos under different historical circumstances.

Introduction

Many of the towns and cities in the Eastern Mediterranean have existed for thousands of years. Some of them were considered ancient already in antiquity and a large number were founded in the last millennium BCE. In this study I will investigate one of these cities from the perspective of resilience, focusing on its ability to rebuild and reconstruct itself after the event of a natural disaster.¹ Is it possible to identify any factors which may have contributed to the resilience of a certain city? Major earthquakes in the south-east Aegean area are known to have occurred between c. 500 BCE and c. 600 CE, and the effects of some of them have been described. I have chosen to work on the polis of Kos and intend to cover the time period c. 200 BCE to c. 200 CE, during which this polis and island suffered disastrous earthquakes in three different periods.

There are several ways in which ancient and modern societies parallel each other and which are interesting to research and discuss also in terms of resilience and endurance. One example is the differences in the geographic scale of states and their types of government. As in the modern world, 'empires' as well as large and small states governed by different forms of constitution – democracies, oligarchies, kingdoms and empires – coexisted during antiquity. Do these factors have an impact on the resilience of a city when it was hit by a major natural disaster? Which factors are most important – independence and self-governance with local control of the economy, or being part of a large empire with enormous resources but where decisions are made far away, the local, basic productive and economic capacity being the same? Does self-governance have an effect on how the population reacts to a catastrophe? Are people living in a democracy² better able to rebuild their society after a disaster than people living in an empire or a monarchy with a top-down organization?

In this study I will consider how society responded to a major catastrophe. In antiquity as today many cities and towns were hit by earthquakes. Some of them were able to recover quickly while others had severe problems and struggled for decades trying to survive, sometimes never recovering. Is it possible to identify

1 The perspective of sustainability has also been considered, but it has been judged unprofitable for this particular study. In discussions of modern cities where this perspective is used, three factors are brought in: the social, the economic and the environmental. To be regarded as sustainable a city must provide a basic standard for all three, i.e. social and economic fairness and environmental awareness and care (see A. Ekblom, *Vad har hållbar utveckling med arkeologi att göra?* for discussion and further references). The ancient Greek and Roman world was a slave society. Slavery was legal, and a substantial part of the population in any one place consisted of slaves. In any Greek polis (city-state) we will find social, economic and legal inequality. Present-day economics involve a global transference of resources, both natural and productive (the workforce), from one part of the world to another. In certain areas basic economic and social security, as well as good living conditions, are provided to the absolute majority of the population. Other areas are distinguished by extremely low wages and harsh working conditions and/or foreign exploitation of the natural resources. Today the exploitation and unequal distribution of resources is global in scale, whereas in the ancient world it was local or regional. I believe it is just as difficult to find modern cities that have achieved the goals of social and economic fairness as ancient ones. The environmental impact of cities in the ancient world is difficult to estimate, but it can be taken for granted that it was much less than that of modern cities.

2 I consider the ancient Greek democratic poleis as direct democracies, having some traits which are different from modern democracies.



Fig. 1. Map of the Aegean (drawn by Michael Lindblom).

any of the factors that helped a city to recover, and are they still relevant today? I will focus on the Greek polis of Kos, situated in the south-east Aegean (*Fig. 1*), during different periods and under different conditions, to see how it did, or did not, manage to recover and rebuild itself after a severe earthquake. Can differences in the form of government, state size, control of the economy and self-pride have made a difference?

The constitutional standing of the polis differed over time. Kos was an autonomous and democratic polis at the beginning of this period, a free agent (within the 'normal' political constraints of any smaller state) in a world consisting of numerous city-states of similar size as well as larger competing kingdoms. At the time of Octavianus/Augustus, 29 BCE – 14 CE, the city-state of the Koans had just been incorporated into the Roman Empire and thus had become a minute part of a vast realm. Many of the Koans during this period, however, remembered independence and must have retained the thought patterns of self-governance. In the later Roman and Byzantine Empires Kos was a small local community of no particular importance to the central government, one of many such communities that had been part of the empire for hundreds of years.

The issues

How well a society can rebuild itself in all its aspects after a catastrophe is dependent on several different factors. I will examine a few of them in different periods and compare the results. I intend to concentrate on the type of govern-

ment and public finances.³ Knowing how the form of government differed in the Hellenistic (c. 330–30 BCE) and Roman (c. 30 BCE–200 CE) periods, what can the ability to rebuild physical structures (buildings, monuments, streets, and infrastructure in the form of water supply and sewage systems) tell us about the resilience of the Koan society in the different periods? Did the capacity of the Koan society to rebuild itself after a catastrophe in the Hellenistic period, when Kos was autonomous, differ from its capacity in the Imperial period, when Kos was but a minute part of the vast Roman Empire? How long did it take to rebuild the physical city and what resources were available? What can the output of the Koan mint at the time of and just after the earthquakes tell us about the financial capacity of the polis?

Background data

Climatic conditions in the period c. 300 BCE–200 CE

According to climate data collected by M. Finné of the Department of Physical Geography and Quaternary Geology, Stockholm University, the Aegean area was characterized by high agricultural activity in the last three centuries BCE. The south-east Aegean was characterized by a warm climate, and data from south-west Asia Minor tell us that this region was warm and wet. The general climatic conditions thus appear to have been highly favourable for cultivating crops in the Hellenistic period (see article in this volume).

A situation similar to that of the Hellenistic period was at hand in this region during the period 400–600 CE.

The polis of Kos

The island of Kos is situated close to the Anatolian headland near present-day Bodrum. Already in the ninth century BCE we find an urban settlement on the Koan acropolis, and today there is an affluent Greek town and, of course, a popular holiday resort. The modern town of Kos thus has a heritage of at least 3000 years. In the late fifth century BCE Kos belonged to a small group of states in the Attic-Delic League (14%) that paid five talents⁴ or more in *phoros* (dues) to Athens.⁵ In the succeeding Hellenistic period Kos grew even wealthier and became a flourishing and prosperous polis. According to modern standards, it was small in size, more like a modern municipality, but it was rich in resources. Vines were grown on an extensive scale and wine was exported in large quantities. The clay beds of the island were used for pottery making, and remains of the famous Koan wine amphorae can be found all around the Mediterranean and the Black Sea. Local marble was quarried and used as building material. Statues and funerary

3 When information is available, comments will also be made on size (physical and demographic), urban plan and infrastructure, degree of political independence, constitutional structure, military organization, degree of economic independence, economic well-being, access to natural resources, trade networks, cultural strength, international integration and contacts, and social integration of inhabitants.

4 One talent = 26 kg of silver.

5 Eighty-six per cent of the states in the league paid less, most of them much less. Nixon & Price 1990, 137–170, esp. 143, 168.

monuments, also in marble, were made and sold both on and outside the island. Another well-known export was silk cloth, a favourite in early Imperial Rome.

During the time in question the island was situated on a major north–south trade route in the eastern Aegean, linking the Black Sea region with the eastern and south-eastern Mediterranean; and the town of Kos had an excellent harbour. This meant that many ships stopped there and paid harbour dues to the polis, providing the state with a fair income. We know of the existence of not only private and sacred banks on Kos, but also of a public bank belonging to the state (δημόσια τράπεζα/*demosia trapeza*). Exports, trade and banking created private wealth, and dues, taxes and banking made the polis itself rich. The city thus formed one of several economic hubs in the eastern Aegean. In the early first century BCE the Greek historian Diodoros Siculus wrote in his *Historia* concerning Kos: “From this time on [c. 366 BCE] it grew greater both through the public resources and through the wealth of private individuals and soon became a match for leading cities”.⁶

The Aegean – a seismic zone

The Aegean is an area often hit by severe earthquakes, and a number of them during the period c. 500 BCE – 600 CE are mentioned in the written sources, both historical and epigraphic. Sources concerning Kos are mainly available from the Hellenistic and Roman periods. Major earthquakes are known to have occurred on the following occasions:⁷

The period of independence, c. 400–30 BCE

Just before 412	(Thukydides 8.41.2)
227/26 (?)	A severe earthquake hit Rhodes as related by Polybios (5.88.1–4; 90.3–4). Did this earthquake also affect Kos?
198	Justinus 30.4; Information from local inscriptions (Segre, <i>ICos</i> , ED 178, ll, 31–32)

The early Roman Imperial period, c. 30 BCE – 200 CE (Rome governs)

26/12/6 BCE	(Hieronymus apud Eusebius, <i>Chronica</i> 2.145; Höghammar 1993, 33; three earthquakes within a period of 20 years)
c. 140 CE	(Pausanias 2.43.5; <i>SHA</i> , Ant. Pius 9.1)

The late Roman and Byzantine Empires, c. 200–600 CE (Rome or Constantinople governs)

262 (?)	(<i>SHA</i> Gall. 5.2–6; Malacrino 2007, 267–68)
334/5	(Elias of Nisibis, <i>Opus Chronologicum</i> 99)
365?	(Ammianus Marcellinus 26.10.15–19)
460 or 469?	(Evagrius Scholasticus, <i>Historia Ecclesiastica</i> 2.14)
554 or 558	(Agathias, <i>Historiae</i> 2.16)

This study is divided into several parts and stages, and in the first stage the impact of the earthquake of 198 BCE and the ensuing reconstruction will be addressed. I will describe the consequences of the catastrophe as evidenced in the archaeological and epigraphic material. I will also give the historical-political context and

6 Diodoros Siculus 15.76.2.

7 All late Roman and Byzantine references are due to Malacrino 2007.

mention some religious aspects. Central to the discussion is the analysis of the largest Koan series of coins we know of, the Asklepios/snake in incuse silver. It encompasses over 100 obverse dies, and is, in comparison to all other Koan issues, huge. In this preliminary paper I will present my current research and thoughts on this issue. I plan to carry out similar research on the Augustan period and on the period after c. 140 CE, both of which are known to have major earthquakes. What happened in the late Roman and Byzantine eras will be brought into the discussion only by way of comparison.

Kos in the early second century BCE

Below I will sketch the material and the method used here in assessing and discussing how the Koan society reacted to the earthquake of 198. The polis of Kos had a distinct interest in various economic activities such as trading, banking and credit transactions. Coins are the most immediate expression of these obligations and interests as ancient states normally struck coins according to need. Thus, they form a valuable source that can provide us with basic information not only on the finances of a certain state, but also – if correctly interpreted, dated and combined with contemporaneous historical events – on the history of the period to which they belong. What I am interested in here is the cost of the reconstruction of the public buildings, the monuments and the infrastructure, and whether this cost can be connected to one particular issue of Koan silver.⁸ There are no inscriptions that list building expenses, as there are, at least in part, for some of the buildings on the Acropolis in Athens and in the sanctuaries at Epidauros and Delphi on the Greek mainland. Instead we are forced to turn to other sources for information. I have chosen to study the above-mentioned Koan issue of coins, since I believe that owing to its size and date, it can be linked to this reconstruction work.

My main source material is the legal tender, the silver coins, issued by the Koan state and thus connected with public policy and public economy. The issue in question shows the crowned head of Asklepios turned to the right on the obverse, and a coiled rearing snake in a shallow square incuse (i.e. a depression) on the reverse (*Plate 1*). I will henceforth refer to this as the Asklepios/incuse issue



Plate 1. Asklepios/ coiled snake in incuse silver coin. Oxford, Keble College, 4/2, 90, 916 (photo courtesy of V. Heuchert, Ashmolean).

⁸ Such expenses were normally met by a combination of resources, including various kinds of public money, donations by individuals (citizens and other residents), as well as donations by foreign states.

to differentiate it from other Asklepios issues. The reverse also displays legends, individual letters, and occasionally a minor secondary motif. The legends consist mainly of the ethnic *κωίων* and the names of the magistrates responsible for the issue. What is unique is that some coins have the legend *βου* for *boule*, the governing council, and others have *προσται* for *prostatai*, the executive committee of the council consisting of five men. This implies an extraordinary involvement on the highest level of the Koan state.

The questions I pose are the following:

1. When should the Asklepios/incuse issue be dated more specifically? Is the currently accepted dating to the second half of the second century and the early first century correct? Having compared this issue to others dated to the first half of the second century, I have concluded that it must be dated to this period, probably starting early on. I will come back to my arguments for this dating further on.
2. Why was this issue minted? Is it possible to discern particular causes for it? The reason I raise this question is that the Asklepios/incuse issue differs greatly from earlier Koan issues in output as measured in the number of obverse dies. It is the largest Koan silver issue ever minted. It is because of this that I think it was connected to the expenses caused by the earthquake in 198. My study aims to verify or falsify this hypothesis.
3. What are the characteristics of this issue? For any issue there are many different aspects to consider. They may all provide us with information about the society which produced it. What can the denomination and value, as well as the standard and circulation of the issue, show us? How should we interpret its size, its longevity and its minting pattern? A careful analysis should at least indicate how the Koans used their resources to meet their needs, and whether the issue can be connected to the reconstruction work after the earthquake in the first half of the second century.

I want to ‘read’ this issue and to do so I need to be able to contextualize it. This, of course, presupposes that it is correctly dated. We are lucky in that, comparatively speaking, there is a great deal of information on the period c. 210–170. This makes the work of dating the issue easier. We have a basic historical outline and also a large number of inscriptions. After Athens, Kos is the polis which has supplied us with the largest number of inscriptions from the Hellenistic period, and the entire Koan corpus lies somewhere between 2000 and 3000 items. And even though most of these inscriptions are fragmentary, they contain a wealth of local information about various Koan matters. One example is the donors listed in the inscription PH10,⁹ several hundred of which gave money to support the war effort against King Philip V of Macedonia in 201. We also have the names of various magistrates and members of different public committees. In addition to these epigraphic sources there is much material dating to this period which comes from excavations and consists of art, artefacts, and architecture.

Before I return to the Asklepios/incuse issue I will give a brief sketch of the historical events. At the end of the third century the polis of Kos was considerably enlarged when the island of Kalymnos was incorporated into the Koan state. This

9 Paton & Hicks 1891, inscription no. 10, 9–22.

was a joint decision and possibly a defensive measure, as several city-states in the region were then threatened by larger enemies. In 202–201 the Koans were involved in the war against the Macedonian king Philip V who attacked the island and even landed troops on it. The Koans, however, thanks to extraordinary efforts that are amply documented in inscriptions, managed to repel these attacks. This war, in which the Koans were allied to Pergamon and Rhodes, developed into the Second Macedonian War, eventually involving Rome as an ally of these states. It ended with the defeat of Philip in Greece proper in 198.

Only six years later, in 192, a new major war broke out. This time one side consisted of Rome, Pergamon, Rhodes and allies including Kos, and the other side of Antiochos III, king of the Seleucid Empire. The war lasted until 189. It is possible that the Koans within only a few years were involved in yet another war, the First Galatian War fought by the king of Pergamon, Eumenes II, in the years 186–83. There are several Koan inscriptions connecting Kos to Pergamon and indicating such an involvement. In the following decade there may have been an additional war, in c. 175, as indicated by an inscription recently published in *Chiron* (1998).¹⁰ Thus we have, in the early second century, one war which the Koans certainly fought in and another two which they may have been involved in.

The reason I bring up these wars is that, *if* the Koans participated in them, it is probable that we should see evidence of this in the minting pattern of the Asklepios/incuse issue if it ran in the 190s, 180s and the 170s.

The earthquake of 198 was a catastrophe, not only for the Koans but for many poleis in the south-east Aegean. Justinus, a later source who probably lived from the late second to the early third century AD, wrote the following: “That same year [198] there was an earthquake between the islands of Thera and Therasia. [...] Also, on that day, in Asia, the same earthquake struck Rhodes and many other cities, causing catastrophic damage as it leveled buildings and swallowed some cities whole.”¹¹ That this earthquake also hit the Koans is clear from an inscription dating to 196.¹² It mentions that *seismos* (an earthquake) had taken place. Unfortunately the text is fragmentary just here so the immediate reading context is lost.

The combined effects of the earthquake in 198 and the war (or wars) must have taxed Koan society to the utmost. That the Koans managed to meet the crises can be seen in the archaeological record. Already Herzog and Schazman, in their publication of the Koan Asklepieion from the 1930s, showed that the large sanctuary of Asklepios, situated about 3 km outside the town of Kos, underwent a major rebuilding and reconstruction period in the first half of the second century. Funding is presumed to have been supplied by the kings Ptolemaios V (?) and Eumenes II, that is, the same kind of international help as that given to Rhodes thirty years earlier.¹³ As the Asklepieion was one of the large Hellenistic cult centres where international penteteric (five-yearly) games were held from 242 on, this was no small undertaking. The *temenos*, the sacred precinct of Asklepios, was situated on three large terraces on a mountain slope. We know that a large temple

10 Habicht, Hallof & Hallof 1998, 157–160, no. 26 B1.49.

11 Justinus 30.4.

12 Segre 1993, ED 178, ll. 31–32.

13 Herzog and Schazmann 1932, 72–74. See also Höghammar 1993, 24f. for a discussion and further references.

was constructed on the uppermost terrace in this period. The stylobate measured 19 x 33 m, and the most expensive building material, marble, was used for the temple. On the same terrace two stoas were constructed as was a monumental staircase leading to it, all in the same period. To give an idea of the staggering size of the expenses necessary for this undertaking, I can point to the case of Delphi. John Davies has discussed the cost of the rebuilding of the temple at Delphi in the fourth century BCE.¹⁴ The information we have comes from inscriptions that speak of contracts and expenses. Davies estimated that merely a partial rebuilding of the west end of the temple, in other words only a small part of it, would have cost over 100 talents, that is, more than 600000 dr. This sum should be kept in mind when we return to Kos. We have to consider that the Koans built not only a completely new temple but also stoas and a monumental staircase. Restorations and repairs in other parts of the sanctuary should also be included in the picture. Furthermore, rebuilding and repairs were also carried out in the town of Kos and elsewhere on the island. We know that the huge agora in the town (300 m long) was repaired and rebuilt in this period. I think that we may safely assume that large parts of the entire *astys* (town) needed reconstruction, and the sums required to carry out all this work are difficult to imagine.

I will now return to the Asklepios/incuse issue and present my results on this coin series. This part of the text contains much detailed information and discussions of many small points which together lead to important conclusions.

There were several different weight standards in use concurrently in the Greek monetary systems. The weight standard normally used on Kos, until c. 200, was the Rhodian one with a drachm nominally weighing 3.3 g. I define the Asklepios/incuse issue as a hemidrachm of reduced weight on a different standard, the 'Persic'/Microasiatic one. That it is *not* a tetrobol on the Rhodian standard as currently assumed in the literature was first suggested to me by the British numismatist Philip Kinns, who commented that the weights of too many coins seemed too high for that denomination. The weights are as much as 2.5 g, and a tetrobol (two thirds of a drachm) on the Rhodian standard used on Kos should not weigh over 2.2 g as the nominal weight of the drachms should be 3.3 g. In 2008 A. Georgotas presented the weights of 260 coins, and 69 of these coins, or 26%, weigh 2.2 g or more.¹⁵ This is just too high a percentage for it to be accidental mishaps in the minting process. If we add the fact that most coins have lost weight through wear, an even higher number of coins must have weighed over 2.2 g when newly minted. The view that the coins of this issue should be seen as tetrobols on the Rhodian weight standard cannot hold.

Why, then, do I suggest that the coins should be hemidrachms on the rare 'Persic'/Microasiatic standard? The reason is that in 201/200 the Koans introduced this new standard on Kos and coupled it with new iconographic motifs. Previously, for a period of about 200 years, the Koans used the Rhodian weight standard and had the head of Herakles depicted on the obverse, and usually, but not always, a crab on the reverse of the silver coins. With the new 'Persic' standard, Asklepios took over from Herakles as the main deity on the coins. This can be seen in three issues which I published in 2007. They are 'Persic' drachms with a nominal weight of 5.6 g, full weight hemidrachms with a probable nomi-

14 Davies 2001, 209–29, esp. 221.

15 Georgotas 2008, 16–18 and catalogue.



Plate 2. Reverses with star behind snake's head. Left: Höghammar 2007, issue D, no. 1 (Paris BNF, FG1228) (photo D. Gerin). Right: Asklepios/incuse silver. Berlin Münzkabinett, no. 18211784 (photo R. Saczewski).

nal weight of 2.8 g, and reduced weight hemidrachms with a probable nominal weight of 2.4 or 2.5 g (issue D).¹⁶ The reverse motif of the last issue, the reduced weight hemidrachms, is the same as on the Asklepios/incuse issue, namely a rearing coiled snake with its head to the right. On some coins in both issues you can also see the same secondary motif, a star placed behind the head of the snake (Plate 2). Even if the majority of the Asklepios/incuse coins weigh less than the earlier issue, it is probable that the intended nominal weight was close to it, 2.3 or 2.4 g. The close similarity in both weight and motifs makes it highly probable that both issues were reduced weight hemidrachms on the 'Persic' standard. I will refer to the coins as hemidrachms, but it is important to bear in mind that they are considerably heavier than the Rhodian standard hemidrachms with a nominal weight of 1.5 g, which we normally think of when we talk of Koan hemidrachms.

Having considered the questions of standard and denomination, and viewing the coins as hemidrachms on the 'Persic'/Microasiatic standard with a nominal weight of 2.3–4 g, I will now proceed to discuss the circulation. Were these coins intended for internal use only, thereby constituting a national issue, or did they circulate freely in the Mediterranean as an international issue? We know that the Koans minted issues intended for international use in this period, as exemplified by Attic weight tetradrachms. The hoards known to have contained Asklepios/incuse hemidrachms, however, were all found in Koan state territory. This is in marked contrast to the Attic weight tetradrachms which all originate in hoards found outside the Koan polis. Another fact to bear in mind is that we know that other poleis coining on this weight standard (for instance Ephesos and Miletos) used it as a national currency. This means that also the Koan issue in all likelihood was national; that is, it was used exclusively within the Koan state.

I have already commented on the size of this issue.¹⁷ J. Kroll, who was the first to make a major study of it in 1964, noted 124 obverse dies, and Georgotas arrived at 139 dies in his study from 2008 which included a larger number of

¹⁶ Höghammar 2007, 79–92, esp. 81–82. Examples with a star behind the snake's head, issue D, nos. 1, 2, 5, 8.

¹⁷ The size and value of a certain issue are indicated by the number of obverse dies known from it, *not* the number of coins. Many dies show that it was a large issue and few dies that it was a small one.

coins.¹⁸ How does this compare with the size of the earlier Koan issues? Thanks to the work of Håkon Ingvaldsen we have, since 2002, an overview of the Koan mint which enables us to make comparisons. The figures given below are from his dissertation.

The total value of a specific issue is, of course, dependent on its weight. To reach a high total value, a smaller number of the heavier tetradrachms or didrachms are needed than if the coins had been drachms or hemidrachms. We can see that the Koans minted a lot of Rhodian weight silver in the fourth and third centuries. In the middle of the fourth century we have an issue of tetradrachms, HI VI (=Håkon Ingvaldsen 2002, issue no. VI), minted from 20 obverse dies, and from the early to mid-third century there is an issue of tetradrachms, HI XIV, struck from 16 obverse dies. If we look at an issue of drachms from c. 260–200, HI XII, we see that Ingvaldsen lists 189 coins and 33 obverse dies. The concurrent issue of hemidrachms, HI XIII, consists of 261 coins made from 39 obverse dies.¹⁹

If we, for reasons of comparison, make a theoretical assumption that all dies were used to strike the same number of coins – and this is, of course, something highly unlikely – the total value of the Asklepios/incuse issue would exceed even the total value of the fourth-century tetradrachms. It would be three times the value of the third-century drachms, and five times the value of the concurrent issue of hemidrachms. And this is judging only from the coins we have today. The reason I bring this up is that we are able to predict the probability of further dies turning up in the future. To do so, we have to look at the ratio of obverse dies to number of coins. A low ratio indicates that we may expect a fair number of new dies if more coins are found, while a high ratio indicates that most dies are known, and that new coins only rarely bring new dies. So let us look at the third-century Rhodian weight drachms and hemidrachms and compare these issues with the Asklepios/incuse hemidrachms.

Beginning with the drachms, there are 33 obverse dies and 189 coins which gives us a ratio of 1:6. As for the hemidrachms, we have 39 dies and 261 coins, giving us a ratio of 1:7. The Asklepios/incuse hemidrachms give us a very low ratio of 1:2 with 139 obverse dies presented by Georgotas and 260 coins. Looking at yet another issue, that of the Rhodian weight didrachms from the neighbouring island of Kalymnos, we can see a ratio of 1:63. That is, all 63 coins that are known and examined were struck from the same obverse die. Such a high ratio means that it is highly unlikely that the appearance of more coins will bring us new dies. For the Asklepios/incuse issue, the opposite is true. We should expect quite a number of new dies if and when more coins from this issue come to light. This means that we do not have the complete picture of the issue, and that it was almost certainly even larger than indicated by the presently known obverse dies.

I will now turn to the question of dating. I have already touched upon the iconographic similarities between the presently discussed Asklepios/incuse hemidrachms and the preceding issue of Asklepios hemidrachms which can be dated to 201/200. One should note the reverse showing the coiled rearing snake with a 'star' behind its head (*Plate 2*). Not only do we have the same main motif shown in exactly the same way, but also the same secondary motif placed in the same position. The iconographic relationship between these two issues is so close

18 Kroll 1964, catalogue 105–117; Georgotas 2008, catalogue, 42–66.

19 Ingvaldsen 2002, issue VI, 102, issue XIV, 130, issue XII, 117–20, issue XIII, 123–25.

that the one seems to be a continuation of the other. The impression of a close connection is further strengthened by the apparent nominal weights, the earlier being 2.4–2.5 g and the later probably 2.3–2.4 g.

Iconography and weight are not the only indicators of a date at the very beginning of the second century. Also the names of the magistrates on the coins point in the same direction. An overview of homonyms (the same name appearing in different sources) on Koan coin issues from the early second century shows that at least nine, but probably eleven, of the twenty-nine names appearing on the Asklepios/incuse hemidrachms, i.e. about one third of them, also appear on other issues. Now, that the same name appears in two or more different sources does not necessarily mean that it refers to the same person. At any one time there were, of course, a number of persons with the same name living on Kos, some belonging to the same generation and others to a different one. A popular name could be used by dozens of people. Still, it is valid to use homonymity in different coin issues as evidence for contemporaneity, and there are several reasons for this. One reason is that not all the population is reflected in the numismatic material. The names on the coins refer only to the men who were responsible for the minting of the issues, and this was a very small group of persons. If one finds a *group* of names which are the same in different issues and which for other reasons are assumed to belong to the same general period, it is highly likely that they refer to the same persons. One can also check how common or unusual a certain name is in the onomastic corpus of the polis. If a name is unusual, then the likelihood that it refers to one and the same person increases further. It is also possible to study the style of the letters. If the shape of the letters in one and the same name is more or less identical in different issues, then one can be fairly certain that the homonym in these issues belongs to one and the same person who used the services of the same die-engraver.

So what can we say about the homonyms on the Asklepios/incuse hemidrachms? Six of them also appear in the bronze issue HI XIX (with 21 known names). This issue is securely dated to the period 210–180/70. The reason I can state that it is securely dated is that coins belonging to it have been found in two separate archaeological find contexts in the agora of Athens, both of them dated to this period.²⁰ That as many as six names appear in both issues is, I think, a good indication of at least partial contemporaneity. In the next issue, HI XXI, dating to c. 190–170, five of the names reappear. The third issue is that of the Apollo hemidrachms which I am convinced date to the 190s. Here we find four names reappearing. Thus we have three different issues, all dating to the early second century, which show a group of names that also appears on the Asklepios/incuse hemidrachms. A further indication of an early date is that in one issue, dating to 201–200, we find the name Agesias combined with the control letter 'A'. It is Höghammar 2007, issue C, also a 'Persic' weight hemidrachm with the head of Asklepios laureate on the obverse, but with a slightly different motif on the reverse.²¹ The same combination of name and control letter can be found on the Asklepios/incuse hemidrachms.²²

20 Kroll 1993, 49–50, 274.

21 Höghammar 2007, 81, nos. 1, 2.

22 Most coins in this issue, including the ones discussed here, have two names on the reverse. Twenty-three coins have a star behind the head of the snake (Georgotas 2008, 31–32).

In view of the nominal weights and the iconographic similarities between the two Asklepios/coiled rearing snake issues, as well as the homonyms in the early second-century issues presented above, I think it is safe to conclude that the issue of Asklepios/incuse hemidrachms started as early as the 190s.

My results so far show that, instead of having an issue of tetrobols on the Rhodian weight standard dating to the late second and early first centuries, we have a national issue of reduced weight hemidrachms on the 'Persic'/Microasiatic standard, dating to the early second century. These results change our fundamental understanding of the issue as well as the context in which it was produced. This forms the necessary basis for future research on the issue.

The next step will be to make a detailed die study of the coins. A careful analysis of the results of a die study will provide us with the minting pattern of the issue. The pattern should show us if it was long-lasting or produced within a short period of time. It will also provide us with at least a partial relative chronology and tell us how many and which magistrates, and in what order, worked together sharing the same obverse die or dies. It should also show us whether there was a relatively stable output on a high or a low level, or if the pattern instead was uneven, perhaps with peaks.

Should the pattern show a short minting period of high intensity and no particular peaks, then one might interpret this to mean that large sums of money were needed within a short period of time. This would indicate that the reconstruction program after the earthquake was carried out in a well-organized and efficient way, not dragging out in time. If the pattern suggests a longer period, perhaps with some peaks, then one would have to compare the intensity of it with that of previous issues and see if it was the same or higher (it can hardly be lower). Should it be fairly high but with some extra tall peaks, it would correspond to a situation in which there was building activity over a longer period of time combined with a need for extra resources whenever a war was on.

The preliminary conclusions on the date of this issue place it in the period immediately following the earthquake of 198. The fact that it is the largest issue known from the polis of Kos shows the extraordinary need of monetary resources during this period. A detailed study of its minting pattern will show us the response of the Koans to the catastrophe of 198. Were they able to raise adequate resources to rebuild the physical infrastructure within a limited period of time and thereby also to revitalize society? Or did the reconstruction drag out over many decades, indicating that they had problems raising enough money and human energy?

The study will clarify the resilience of Koan society during a period when it was independent and was governed democratically. When the second and third parts of the study, on the Augustan period and the recovery after the major earthquake of 142, have been carried out and all the data are at hand, a comparison between the three cases may show whether there are any differences in the ability of Kos to reconstruct itself after a major catastrophe. In this context the importance of two specific factors will be scrutinized in particular, that of independence (economic and political) and of the constitution (democracy or minor part of an empire), the basic geo-economic factors being the same.

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10. The Fall and Decline of the Roman Urban Mind

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ABSTRACT

This chapter discusses the 5th-century west Roman imperial residences of Rome and its substitutes Arles and Ravenna, as understood within the framework of an imperialist ideology of urbanism, the “Roman urban mind”. During the late Roman Empire, the city of Rome was the central focus of the old Roman infrastructure. Ideally, the highest echelons of the imperial administration also ought to be located in Rome. There was an underlying idea that the purpose of the Roman Empire was to sustain the city of Rome – the capital of the world – and its ever-growing population. In this paper the authors argue that in spite of the fascination with Rome as the *caput mundi*, urban sustainability and resilience were problematic matters within the West Roman Empire. The imperial state apparatus proved incapable of resolving these issues in the face of barbarian attacks and internal strife. This spelled the end for the Roman urban mind.

Introduction

This chapter discusses the 5th-century West Roman imperial residences of Rome and its substitutes Arles and Ravenna, as understood within the framework of an imperialist ideology of urbanism, the “Roman urban mind”. Paraphrasing and reversing the order of Edward Gibbon’s classic title, *The Decline and Fall of the*

*Roman Empire*¹ the paper seeks to offer a new, widened frame of interpretation. It attempts to take into account different perspectives on how urban societies are incapable of change and transformation not only vertically in terms of order and hierarchy, but also horizontally in terms of mutuality between city and hinterland and the overall support system in terms of infrastructure. In addition, the perspective of the barbarian outsider, who prefers to act outside of established networks and mutuality, must be taken into account.

In this chapter we argue that, in spite of the fascination with Rome as the *caput mundi* 'the capital of the world', urban sustainability and resilience were problematic matters within the West Roman Empire. The imperial state apparatus proved incapable of resolving these issues in the face of barbarian attacks and internal strife. When an urban population is faced with warfare, an irregular climate and food shortages, the urban leadership has to act. Yet the ensuing consequences of these actions may be quite far-reaching and go well beyond the intended results. During the apex of the Roman Empire, the city of Rome was the central focus of the Roman infrastructure. Ideally, the highest echelons of the imperial administration also ought to be located in Rome. This was no longer the case in the late 5th century, however.

Roman political action appears to have lagged behind and followed the law of least possible resistance, relying on the recruitment of barbarian warriors who were paid in gold coinage. The reason for the western Roman military establishment's increased recruitment of barbarian troops lay at least partially in the two major defeats suffered by western usurpers against Theodosius I in the late fourth century (Maximus in 388 and Eugenius in 394). In 395 Theodosius died, leaving Stilicho in charge of the depleted western armies. Before Stilicho could rebuild the military strength of the West he was faced with severe challenges in the form of invasions of Italy by Alaric, the fall of the Rhine-frontier in 406 and the usurpation of Constantine III in 407. The only course open to him was to recruit barbarian troops on a scale hitherto unseen. For the rest of the western empire's existence barbarian troops would form the core of the army. It was very difficult for the financially strained state apparatus to pursue, at times, very ambitious but short-lived enterprises against barbarian attacks and food shortages with other alternatives once the first initiatives failed. Cases in point are the unsuccessful military campaigns of the emperors Majorian and Anthemius against the Vandals in North Africa and the Visigoths in Gaul and Spain in 458–461 and 467–471. Both Majorian and Anthemius were murdered by disgruntled barbarian officers. Anthemius' death coincided with a lengthy siege of Rome and a subsequent plundering in 472, as well as a widespread famine followed by an epidemic.² Many unexpected reactions followed instead, notably internal strife amongst the military leadership within the imperial administration, which benefited the barbarian aggressors. This led to the collapse of the West Roman Empire as a political entity which, in turn, caused substantial de-urbanisation.

The late Roman Empire of the 5th century may be described accordingly: two emperors rule one half of the empire each by means of a hierarchical state apparatus. Each emperor rules his half from a palace. This was usually located within an urban environment, normally Rome and Constantinople (Fig. 1). These two cities were to become dominant in imperial ideology during the 5th century,

1 Gibbon 1897.

2 Stathakopolous 2004.



Fig. 1. Map of 4th-century Rome

since the 4th-century western capital of Trier was no longer used as an imperial residence after 391 and fell prey to a barbarian plundering in 406. In times of crisis, the western imperial residence could only be relocated from Rome or Milan to the safe outpost of Ravenna or to Arles, the residence in southern Gaul. And the crises came all the more frequently in the 5th century. Arles was to assume the position as seat of praetorian prefect of Gaul and thus as the imperial residential city of Gaul after the fall of Trier in 406. In Italy, the previous alternative capital of Milan was permanently replaced by Ravenna in 402 (see Fig. 2). Ravenna then also periodically came to replace Rome, especially during the reign of Valentinian III (425–455). Why did these shifts take place?

In regard to the 5th- and 6th-century decline of the city of Rome, the fall of the West Roman Empire, and the establishment of Germanic successor kingdoms on its former territory, there are two main theories: gradual transformation and rapid collapse. Peter Brown formulated an influential theory on a slow transformation with important regional differences.³ Walter Goffart has also argued for a slow reshaping of Roman society rather than an abrupt break.⁴ Lately, however, the traditional theory of catastrophe has become en vogue in Late Antique research. Bryan Ward-Perkins and Peter Heather describe the same chain of events as the collapse of a civilization with tangible repercussions.⁵ In particular, Ward-Perkins points to the fall in overseas commerce, notably the import of pottery to Italy.

Sustaining the Roman Urban Mind

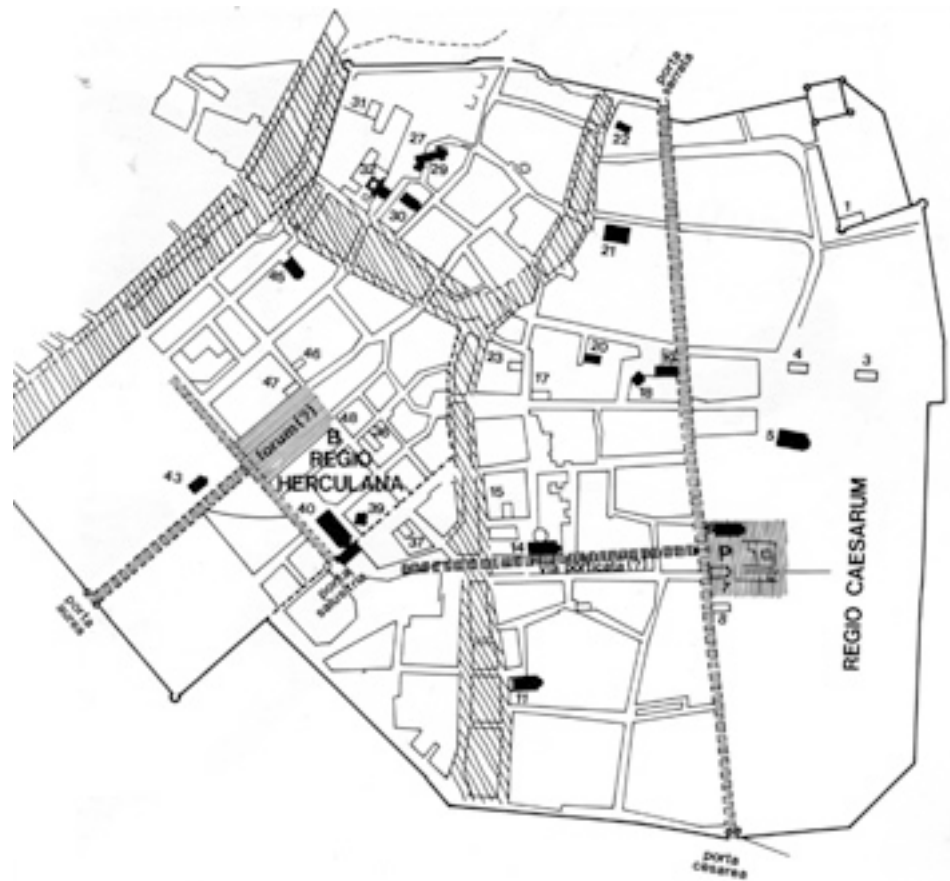
During the Late Roman Empire, the city of Rome was the central focus of the old Roman infrastructure. Ideally, the highest echelons of the imperial administration also ought to be located in Rome. There was an underlying idea that

³ Brown 1971.

⁴ Goffart 1980.

⁵ Ward-Perkins 2005; Heather 2005.

Fig. 2. City Plan of
Ravenna



the purpose of the Roman Empire was to sustain the city of Rome – the capital of the world – and its ever-growing population.⁶ What was wrong with Rome, then? Urban areas were in general incapable of supporting their own populations. The residential cities were supplied with fresh water and comestibles from the outside. The population of Rome received state subsidies in terms of cheap food-stuffs, the *annona*. Oil and grain were transported from Egypt and North Africa via the ports of Portus and Ostia some 20 km downstream the Tiber River from Rome.⁷ In the late 4th century, the imperial administration had divided Italy into two administrative units, *Italia annonaria* and *Italia suburbicaria*, that is, the part of Italy that was providing the *annona*, and the part of Italy that was within reach of the city. This had little effect on sustaining the city of Rome, however.

It is apparent that the 5th-century urban centres were vulnerable to sudden changes in the equilibrium of military security, fresh water supply, grain import, and the real monetary value of commodities. In order to maintain the status quo, the urban population of the imperial residential cities had to rely on a functioning military protection while being supported by the emperor by means of fresh water via aqueducts and heavily subsidized grain imports. On occasion, the imperial bureaucracies failed to provide all of this to the urban population. Life in 5th-century Rome proved to be difficult in comparison to life in the expanding Constantinople.

During the 4th century and most of the 5th century the Roman infrastructure guaranteed the city of Rome both security and a relatively stable supply of neces-

⁶ Sirks 1991.

⁷ Sirks 1991.

sary foodstuffs.⁸ With the fall of the West Empire in 476 and the Ostrogothic conquest of Italy in the 490s, there were only subtle changes to this order, and they were more in terms of scale.⁹ But the Byzantine conquest (534–554) and the Lombard invasion (568–571) caused significant changes. Breaks in settlement patterns and demographic reproduction along the main roads and junctions became apparent. It is clear that suburban settlements along the main entry routes into Rome, as well as larger towns and villages in the peripheral intersections, declined at a rapid pace at this time.¹⁰ People did not simply move to different locations; faced with changing conditions which had an adverse effect on their ability to sustain themselves, they disappeared completely. The Roman infrastructure remained to a large degree intact. But the network that enabled favourable conditions at nodal settlements within the infrastructure had become disadvantageous. Roads were open, but the opportunities to use them were limited and entailed considerable risks. A still functioning urban network was abandoned in a time of crisis. The traditional use of the network, for which it was built, disappeared and was replaced by one in which those who had previously benefited from it came to suffer. This is a reversed infrastructural order which benefited a few, but worked to the detriment of the population at large.

The impressive infrastructure of roads and aqueducts has been seen as a necessary prerequisite for urban growth within the Roman Empire and especially for the viability of the city of Rome itself.¹¹ Cartographic material indicates that similar ideas were current among Romans. There was a clear emphasis on the layout of roads rather than an accurate graphical representation of the areas through which the roads passed.¹² However, as will be shown below, this infrastructure could be equally instrumental in providing the means for depopulation and de-urbanisation. The main Roman roads in Italy were well built with the central part made of basalt stone.¹³ They therefore required relatively little maintenance. During the lengthy periods when the safety of the infrastructure was guaranteed by the military strength of the Roman Empire, road intersections generally attracted trade and settlement, that is mutuality. In the Roman Empire first roads, then aqueducts and fortifications spurred urban growth during half a millennium. But what happened during periods of economic decline and de-urbanisation? Without military security, the land-based network ceased to be a resource for mutuality and for the reproduction of the hierarchical order and became a broad, horizontal security risk within the immediate reach of small units of highly mobile cavalry units engaging in asymmetrical warfare.¹⁴ The likelihood of being exposed to violence and terror is greater the closer one is to an intersection in the network, as it is most likely that this is where the asymmetrical intrusion will take place.

The city of Rome underwent depopulation during the 5th century. This depopulation process then spread from the city of Rome to the entire Italian countryside during the 6th century. Current population estimates of the city of Rome around 400 suggest approximately 800000 inhabitants. Some 300000 urban

8 Sirks 1991; cf. Symmachus *Rel.* 18, 35, 37.

9 Moorhead 1992.

10 Ward-Perkins 1984; 2005, 139–141.

11 Ward-Perkins 1984; Laurence 1999.

12 Salway 2005

13 Laurence 1999.

14 Mack 1975.

denizens disappeared during the crisis of 408–419 when Italy was invaded by the renegade Visigoth army unit under Alaric. By the 6th century the population of Rome had fallen to a mere 80000.¹⁵ This made things easier for the new Ostrogothic rulers of Italy in the late 5th and early 6th centuries. With a city population that had suffered a 90% decrease since 400, the Ostrogoths no longer needed to use the ports to import the *annona* from abroad. Instead, it was gathered within Italy and transported by means of the regional road network.

“The Noble Order of Cities”

An Apology for the Roman Urban Mind

How is one to appreciate the Roman ideological perception of urbanism? Civilization, according to the Romans, was based on the city.¹⁶ Only barbarians lived in non-urban societies. It is furthermore important to understand that the Roman imperialist conception of the state and its urban civilisation was one of inertia, very slow to change, largely reactionary, and eager to put the blame on irrelevant factors. There were fixed notions that were supposed to be followed slavishly and little room for any major reform or radical critique. This was especially true in regard to urbanism as understood by the imperialist ideology. While working as a tutor for young Gallo-Roman nobles in Burdigala (present-day Bordeaux, France) c. 334–364, the poet Ausonius ranked the city of Arelate (present-day Arles, France) tenth among the top 20 Roman cities within the following order in his poem *Ordo Urbium Nobilium* (The Noble Order of Cities), see Table I:

Table 1. Twenty Roman Cities Ranked According to the *Ordo Urbium Nobilium*

Latin name	Current name	Sack
Roma	Rome, Italy	410, 455, 472
Constantinopolis	Istanbul, Turkey	
Carthago	Carthage, Tunisia	439
Antiochia	Antioch, Turkey	484
Alexandria	Alexandria, Egypt	
Augusta Treverorum	Trier, Germany	406, 419
Mediolanum	Milan, Italy	409, 488
Capua	Capua, Italy	
Aquileia	Aquileia, Italy	488
Arelate	Arles, France	411, 471
Hispalis	Sevilla, Spain	409–411
Corduba	Cordoba, Spain	409–411
Tarraco	Tarragona, Spain	409–411
Baraco	Braga, Portugal	409–411
Athenae	Athens, Greece	
Catania	Catania, Italy	455
Syracusa	Syracuse, Italy	455
Tolosa	Toulouse, France	418
Narbona	Narbonne, France	418
Burdigala	Bordeaux, France	418

¹⁵ Durlat 1990.

¹⁶ Revell 2009, e.g. 54.

This urban ranking is clearly subjective. It is meant as an expression of local chauvinism and a didactic piece for young Gallo-Roman aristocrats, with the learned addition of towns credited with a great past such as Capua and Athens. Meanwhile, important 4th-century cities that struck gold coinage, such as Heraclea, Nicomedia, and Thessalonica, are missing. Note that Ausonius further claimed that Arles was the Rome of Gaul:

*"Pande, duplex Arelate, tuos blanda hospita portus, Gallula Roma Arelas, quam Narbo Martius et quam accolit Alpinis opulenta Vienna colonis, praecipitis Rhodani sic intercisa fluentis, ut mediam facias navali ponte plateam, per quem Romani commercia suscipis orbis nec cohibes populosque alios et moenia ditas, Gallia quis fruitur gremioque Aquitania lato."*¹⁷

"Open your gates, double Arles, friendly hostess, Arles – little Rome of the Gauls, neighbour of Narbonne and Vienne, which have enriched the settlers of the Alps. The rapid current of the Rhône divides you in such a way that a boat-bridge forms a place in your middle. This river brings you all the produce of the Roman world, you do not steal it, and you enrich the other peoples and cities within Gaul and Aquitaine."

It is quite debatable, however, whether the adjective "duplex" in conjunction with the place name Arles was there to emphasize ideological grandeur or simply to emphasize the fact that the city was divided by the Rhône.¹⁸ It is rather evident that Arles never quite measured up to the two sisters, Rome and Constantinople, nor was it ever allowed to take on an ideological identity of its own, like Trier did in the 4th century when Ausonius composed his greatest poem *Mosella* in praise of the most distant imperial capital. Arles remained, at best, a provincial copy of Rome. Eleven of the twenty cities listed by Ausonius were under barbarian control by the 5th century and most cities had been sacked by barbarians or renegade army units. These cities were thus already part of the general urban decline beyond the reach of the imperial administration. Another city not mentioned by Ausonius is Ravenna, which effectively came to replace Rome as the most favoured place of residence in the first half of the 5th century. The ideological reason for Honorius to transfer his residence from Rome to Ravenna was debatable, but it was clearly a wise decision given the fall of Trier in 406, Milan in 408, Rome in 410, and Arles in 411.¹⁹ But despite the fact that Ravenna was, by and large, the exclusive imperial residence in the west during 402–440, and the seat of the praetorian prefect of Italy, this did not confer it a new status of ideological power at the expense of Rome – on the contrary. Rome was the burial ground of the Theodosian dynasty ever since Theodosius I had been buried there after his death in Milan in 395. The destroyed Church of San Giovanni Battista in Ravenna has been attributed to the empress Galla Placidia as a sort of dynastic church with a strong expression of the Christian faith of the Theodosian dynasty, but religious piety is not tantamount to ideological orthodoxy. Instead, the idea that Ravenna somehow stood for the supreme ideological power in Italy and that this was tied to religion should rather be attributed to the 6th century and

17 Ausonius, *Ordo Urbium Nobilium*, 73–80.

18 Constans 1921.

19 Lejdegård 2002.

the Arian Ostrogothic king Theoderic and later the Byzantine emperor Justinian with the foundation of the Exarchate of Ravenna.

Rome and Its Hinterland

Very few emperors were able to reside in Rome, although this was a key point in the imperial ideology that constituted the Roman urban mind. This had to do with the inconvenient location of Rome. Rome lies in the province of Lazio on seven hills on the Tiber River, a body of water that allows for boat traffic some 100 km upstream from the seaports of Ostia and Portus, the distance to Rome from the ports being some 20 km. As the Tiber is relatively narrow and shallow, it is prone to flooding with ensuing complications for the grain stores along the city shores. If the ports were shut down or the Tiber was blocked, the road network remained the only alternative. The water supply of Rome, known as the *cura aquarum*, was maintained by a water system covering over 500 km. Eleven aqueducts and a further eight channels delivered water to the fountains and baths of Rome.

Even if the main part of the water supply system was constructed between 312 BC and AD 109, the aqueducts were maintained and repaired by the government well into the mid-6th century.²⁰ Ward-Perkins argues that the aqueducts fulfilled an ideological rather than a sustaining role.²¹ In support of this view, he argues from a number of cases during the many 6th-century wars when aqueducts do not appear to have had a major impact on the sustainability of the urban population. However, the water supply that was able to provide 800000 people with water in the city of Rome during the late 4th century does not stand in reasonable proportion to that of a population that had shrunk by 90% a century later.

The imperial capital of Rome was both a liability and an asset. The main defence of the city was its outer wall. First begun in the 270s, it measured 6 metres at its lowest point and was 3.8 metres wide. It stretched some 19 km with 29 gates and 381 towers, and enclosed some 2500 hectares and 46000 building blocks known as *insulae*, which at the population peak in the mid-4th century may have housed as many as one million people.²² The wall underwent significant changes during the first half of the 5th century, especially after the 442 earthquake. Despite this massive defensive structure, Rome was plundered in 410, 455 and 472. This was mainly due to lack of food. When communications between Rome, and Ostia and Portus, the two main ports of Rome, were cut by a besieging army the problem of feeding the huge population became insurmountable. Later in the 6th century, when the population of Rome had shrunk significantly; the city walls of Rome were simply so vast that they could not be defended by the military resources available to the city authorities. The emperor was no longer safe there. So what were the alternatives to Rome?

Arles and Its Hinterland

Arles is located in the Rhône River delta in the south of France (Fig. 3). This

²⁰ Lancon 2000; Bruun 1991.

²¹ Ward-Perkins 1984, 123–124.

²² Durliat 1990; Fields 2008.



Fig. 3. The Rhône River Delta

region faces the Mediterranean with an area of intermittent brackish-water lagoons. It is therefore not a good arable area, although it served for the grazing of livestock. In the 2nd century, the export of wine from the Rhône valley was quite important for Arles.²³ By the fourth and fifth centuries Arles was important both for the commercial distribution of goods and as a major centre of the *annona*, the state-controlled distribution system devised to supply the imperial court, army and the city of Rome.²⁴ It is safe to assume that trade volumes continued to expand throughout the 3rd century and the first half of the 4th century. Strategically located on the shores connecting the Iberian and Italian peninsulas right on the major body of water from inland Gaul, it became a vital military strongpoint after the fall of Trier, the invasion of Spain and Gaul by Vandals and Visigoths. Fifth-century Arles is interesting in that it has many features that initially qualified it to be a successful imperial residence. But the three first usurpers of the 5th century residing there must be regarded as failures. This had repercussions for the city. The town underwent no less than seven different sieges 411–508. After having taken control over much of Gaul and Spain after the fall of Trier in 406, Constantine III was trapped in Arles during a siege in 411. The city fell, and Constantine III was captured there and later executed, his and his son Julian's decapitated heads reaching Ravenna on September 18th 411. Later the usurper Jovinus surrendered to Honorius' forces further south at Narbonne in 413, his and his brothers Sebastianus' and Sallustius' decapitated heads eventually reaching Ravenna on August 30th 413. From his base in Ravenna, Honorius appears to have been able to re-establish a real military presence in Arles, minting in the city in 418. Later Avitus fled to Arles after his failure to hold power in Rome during the famine of 455 caused by the Vandal sack of the city. Once secure in Arles, he raised an army to go back into Italy but was defeated on October 17 at Placentia. He was allowed to resign and was ordained a bishop, soon after which he died. His death was attributed to his successor, Majorian, who ran the West Empire from Arles 458–461 after having first established military security in Italy before his campaigns in Spain and Gaul that were to cost him his life (Plate 1). Gold coinage was later struck in Arles by the two last western emperors Julius Nepos and Romulus Augustus, and this coinage reached Italy. After the fall of Romulus Augustus in 476, Arles became less important. Yet in 508 the Ostrogothic king

23 Constans 1921.

24 Loseby 1996, 46–47.



Plate 1. Reverse image of a solidus struck for Majorian in Arles, 458. Photo courtesy of the Royal Coin Cabinet, Stockholm.

of Italy, Theoderic, wrote to the habitants of Arles urging a reconstruction of the ramparts.²⁵ Whether for sentimental or strategic reasons, Theoderic was still prepared to invest in the upkeep of the fortified city that was a key bridgehead between Spain, Gaul and Italy.

Ravenna and Its Hinterland

Ravenna lies at the southern end of the Po River delta along the Adriatic shores of north-east Italy. It is specifically located in a moist, brackish-water area, which is a perfect breeding ground for mosquitoes. Indeed, malaria is endemic to the Veneto region and the Po Valley.²⁶ Malaria infection is most frequent in the late summer and early fall. Ravenna was always a relatively minor settlement on a few sandy islands along a long, coastal, sand dune facing the Adriatic to the east and inland marshes and lagoons to the south, west and north. The harbour was enlarged during Augustus, who also had grand plans for connecting Ravenna directly to the Po River by means of the Fossa Augusta, a vast canal project, but the main harbour would remain further south at Classe. Ravenna replaced Milan, as the latter city had inadequate defences to withstand a siege. Besieging Ravenna was a completely different matter. It was fortified by its surrounding biotope, hostile to human intervention.

In contrast to Milan and Rome, Ravenna was also easily accessible from the Adriatic Sea and thus close to Constantinople. Milan remained an important garrison and imperial mint in close contact with Ravenna, but the imperial court usually refrained from staying in Milan after Alaric besieged the emperor Honorius there in 401. The link to Rome was another issue. Mobile military units could cut off communications between Ravenna and Rome across the Italian peninsula without exposing themselves to more than minimum danger. A key explanation of the decline of the city of Rome, the isolation of Ravenna, and the inversed function of the network in the 6th century is that a hierarchical order was needed to sustain the old Roman network. A disciplined army under competent leadership with an ability to act for a prolonged period of time within rather than outside the network was needed in order to guarantee its security. But this could not be organized from Ravenna as time progressed.

²⁵ Constans 1921, 224–225; Cassiodorus Var VIII.

²⁶ Stathakopoulos 2004.

Table II
The Late 4th- and Early 5th-Century Imperial Residences in Comparison

City	Population (est)	Hippodrome	Theatre	Arena	Imperial residence	Mints (officinae)
Rome	500000	270000	50000	50000	440–455, 462–465, 468–474	5
Constantinople	350000	30000			324–	4–5
Trier	100000	20000	18000		293–311, 367–391, 407–408	3
Arles	75000	20000	10000	20000	409–411, 455–456, 458–461	3
Ravenna	50000				402–440, 467–468 474–476	1

One may contrast the three imperial residences in the 5th-century West Empire by first evaluating them according to a number of criteria in terms of infrastructure and public accommodation, and then contrasting their collective timeline against the successful eastern imperial residence of Constantinople and the lost 4th-century western capital of Trier.

In Table II, the various aspects of urbanism and imperial administration are plain to see. Firstly, Rome, Trier and Arles all have large arenas, theatres, and hippodromes to accommodate the inhabitants of their respective hinterlands, who entered the cities to partake in spectacles and games on given holidays. Rome could theoretically have fitted all the inhabitants of Constantinople into its three main public arenas. By contrast, the still smaller and younger city of Constantinople had no large theatres or arenas and only a relatively small hippodrome, which was a very complicated imperial propaganda piece that required substantial military security measures. Following the precedent set by the Circus Maximus and the imperial palace in Rome, the hippodrome was in direct contact with the imperial palace via the VIP section known as the *kathisma* (Plate 2). Indeed, this hippodrome was the scene of two serious rebellions in 505 and 531, respectively. No comparable buildings have yet been identified in Ravenna, although at least a minor hippodrome is likely. Rome and Arles were old-fashioned cities tied to a functioning infrastructure whereas Trier was a vast outcrop at the very end of the infrastructure. By contrast, Constantinople was a successful meta-city above the network (albeit with some serious internal security problems) while Ravenna was too insignificant to play any major role for its hinterland at all.

Roman Gold Coinage as Analysed by the LEO Project

To pay for all supplies and military security, the imperial state apparatus had to use real money – hard currency meant only for the state and its functionaries.

Plate 2. The Theodosian imperial family in the kathisma surrounded by their Germanic bodyguard. From the Theodosian obelisque celebrating the defeat of Magnus Maximus in 388 in the Constantinople hippodrome. Photo by Anneli Sundkvist 2008.



Roman gold coinage, *solidi*, was only struck in the imperial residences and usually in the vicinity of the emperor. Roman gold coinage is thus very apt research material as its relative frequency is highly indicative of the allotted importance of a given imperial city in a specific period. The research of the LEO project is focused around two databases, BLEO and CLEO. BLEO (Baltic/European Liber Excelsis Obryzacusque) is constructed at a micro level and currently consists of approximately 7300 individual gold coins from the period AD 249–565. CLEO (Continental Liber Excelsis Obryzacusque) is constructed on a macro level and consists of 180 gold hoards in Europe, the Middle East, and North Africa with approximately 22000 gold coins.²⁷ The ultimate goal of the LEO project is to relate the two databases to climate data and to correlate this with historical sources.²⁸ It will thus establish a more coherent timeline for coinage, climate data and historical sources, visualizing a multi-dimensional frame of reference where urban sustainability and resilience can be assessed from a new perspective. One way of establishing the comparative role of urban centres in the Roman Empire is to look at the aftermath of the coinage reforms of Diocletian in 294 and Constantine in 326 and Valentinian I in 367. By means of these reforms, 13 Roman cities were allotted the right to strike coinage for the empire within 10 given dioceses out of a total of 13, see Table III.

²⁷ Fischer *et al.* 2011.

²⁸ Stathakopoulos 2004; Fischer *et al.* 2009.

Table III. Cities with Imperial Gold Mints after the 326 Reform

City	Diocese
Trier	Galliae
Lyon	Galliae
Arles	Viennensis
Aquileia	Italia annonaria
Rome	Italia suburbicara
Siscia	Pannoniae
Thessalonica	Moesiae
Heraclea	Thracia
Constantinople	Thracia
Cyzicus	Pontica
Antioch	Oriens
Alexandria	Aegyptus

In regard to Table III one may first note that the three dioceses of Britanniae, Hispaniae, and Africa were not given mints even though urban centres such as Sevilla, Carthage and London clearly could have supported these. Secondly, when one looks at the number of imperial mints located in each city, it is abundantly clear that Rome and Constantinople retained an absolute hegemony. They struck gold, and lots of it. Arles rarely struck gold but had three mints for the substantial amounts of bronze coinage that were needed in the hinterland economy of southern Gaul. After 367, the imperial mints became more mobile and tied to the imperial persona. Following the deaths of two senior emperors, Valentinian I in 375 and Valens in 378, the imperial administration became unstable. A lengthy interim period with a number of itinerant rival emperors followed, so that state finances in the western part of the Empire became sporadic, see Table IV.

Table IV. Sporadic Gold Mints of the Late 4th Century AD

City	Issuer	Chronology
London	Magnus Maximus	383
Sirmium	Theodosius I	383–388
Lyon	Magnus Maximus	385–388
Lyon	Valentinian II	388–392
Lyon	Eugenius	392–394

Table IV shows how rival emperors had to move the imperial mints during their internal wars that further weakened the empire. This coinage was struck in alternate cities when the imperial courts had to finance military expeditions away from the normal residences. In 394, Theodosius I emerged as the sole victor, settling down momentarily in Milan. With the death of Theodosius the next year, these alternative mints ceased to be of any major importance save for the usurpation of Constantine III in 407–411 when the latter reactivated the dormant imperial mints of Trier and Lyon. Instead, the number of imperial mints became even smaller, yet the output was to become even more disproportionate, see Table V.

Table V. Mid- to Late 5th-Century Cities with Imperial Gold Mints

City	Diocese
Arles	Galliae
Ravenna	Italia annonaria
Milan	Italia annonaria
Rome	Italia suburbicara
Thessalonica	Moesiae
Constantinople	Thracia

Table V is quite revealing, showing how Constantinople monopolized state finances in the East Empire while the West Empire was undergoing a comparative downsizing in the number of imperial mints but without the corresponding growth and affluence demonstrated by Constantinople. Gold coinage began to be issued in Ravenna in 402 with the transfer of the Milan mint to Ravenna under Honorius. Ravenna was soon given its own acronym on coinage, RV. It was to be frequently imitated. The Ravenna mint does not identify separate *officinae* within its coinage although it struck gold and silver to begin with, suggesting that separate officinae must have been active from early on. The Ravenna mint was not in constant operation, although its peak is clearly measurable against Milan in particular. Its hiatuses are quite easily measured, though, in particular in relation to the mints of Rome in 450–455 and Arles in 455–561. After 450, Ravenna only struck gold coinage, just as Milan had before. A larger overview of all the gold coins recorded in CLEO with certain mint marks identifying the city in question shows the ascendancy of Constantinople in an even more obvious fashion, see Table VI.

Table VI. Gold Coinage Recorded in CLEO with Certain Mint Marks, AD 317–565.

City	Gold Coins	Percentage
Constantinople	3300	55.4 %
Milan	804	13 %
Rome	683	11 %
Ravenna	425	7 %
Trier	360	6 %
Thessalonica	94	1.6 %
Antioch	92	1.5 %
Lyon	89	1.4 %
Arles	71	1.1 %
Sirmium	70	1.1 %
Total:	5988	100 %

Furthermore, Table VI shows that the city of Rome was in a poor financial state that progressively grew worse during the 5th century. More than half of all gold coinage with certain mint marks was struck in Constantinople and dates to the mid-5th century and the reign of Theodosius II (408–450) and Leo I (457–474). Much of this coinage must be regarded as subsidies directed to aid the inept western emperors. The entire Italian output amounts to only 31% of the total. Note also that the two alternative residences of Arles and Ravenna produced the equivalent of two thirds of the total output from Rome, but only during relatively short periods. The study of Roman gold coinage of the LEO project shows that the imperial administration did not have the financial means to support the costs for sustaining the city of Rome, and that the attempts to run the administration

from the alternative cities were doomed to fail, given the constant threat of barbarian incursions and the financial dependency on Constantinople.

The 6th-Century Decline of the Roman Urban Mind

After the deposition of the last West Roman emperor in 476, the supply system to Rome continued to function more or less as usual under the Ostrogothic king Theoderic. Subsistence demands had diminished as the urban population had decreased, yet a precondition for the continuity of the Italian urban system was the relatively strong and legitimate central power that Theoderic had established and which was able to maintain and control the network that sustained urbanism. But during the Byzantine conquest of Italy 534–554, this precondition was notably absent. Neither the Byzantines nor the Ostrogoths after the death of Theoderic could maintain a central authority. It was by no means obvious to Italian urban magistrates who represented legitimate power. In 536 the city of Rome accepted the troops of the Byzantine general Belisarius. Naples, on the other hand, refused to do so, causing Belisarius to lay siege, storm and sack the city. Furthermore, the small military forces available to the combatants prevented both sides from establishing any sort of long-term and viable hegemony. It was not until after 562 that the Byzantine armies finally succeeded in defeating the Ostrogoths after Narses in 553 had secured Via Flaminia by conquering the strategic town of Spoleto. Before that, the control of Italy and Rome had changed hands several times. The Roman urban mind that had survived the fall of the West Empire a hundred years earlier disappeared with the Byzantine conquest. The economy was shattered and there was a significant depopulation.

The Lombard Invasion and the Dissolution of the Roman Urban Mind

In 568, the Lombards invaded and gained control of substantial parts of Italy. They consciously avoided attacking large urban centres, successfully negotiating surrenders on a local level. Confiscated lands were divided between the leading Lombard families. This is mirrored in the Lombard cemetery of Castel Trosino where as many as 90% of all buried men in the period 570–610 have swords in their graves.²⁹ It is possible to trace the creation of a new network of genealogically related power spheres diffused throughout Italy in the shape of Lombard landownership in the old Roman network. The Lombards, however, lacked resources to control all of Italy and soon lost hierarchical cohesion. A periodically strong kingdom was established in the north with the town of Pavia as its capital.³⁰ Meanwhile a number of smaller principalities were established to the south.³¹

The result of the Lombard invasion was the creation of a number of smaller enclaves, power spheres above and outside yet within the old Roman network. These developed along road intersections which had previously been of lesser

29 Åberg 1923; Lindqvist 1926; Paroli & Ricci 2008.

30 Paulus Diaconus 27–28.

31 Christou 1991, 177.

importance, such as Monza and Pavia to the north of Rome, and Spoleto, Fermano and Benevento along Via Flaminia and Via Appia further south. During the Byzantine conquest and the Lombard invasion, military tactics were dictated by the old Roman network. The antagonists strove to avoid fortified intersections in the network by staying off the roads as much as possible before amassing sufficient strength to attack more vulnerable intersections. This type of asymmetrical warfare required a high level of mobility. The solution was a reliance on small cavalry units.³² One may note a failed Frankish attempt to invade northern Italy with infantry in 539–540. The Frankish force was severely weakened by starvation, disease and illness and soon disappeared from the historical sources.³³ Belisarius intentionally recruited his cavalry units from distant places and thus often employed Alans and Huns³⁴, a practice also used by the Lombards. Being short of manpower, the Lombards invited other groups of Indo-Iranian and Slavic origin to settle in Italy. Late Antique and early medieval cavalry units did not as a rule use shod horses. Since hoofs are sensitive³⁵ and since the surface of Roman roads were of stone, cavalry units would avoid the road network as much as possible. Instead they used the surrounding hinterland where suburban green areas and abandoned cultivated areas provided cover prior to assaults on settlements and intersections. Thus, the mobile military units could cut off communications between Ravenna and Rome across the Italian peninsula without exposing themselves to more than minimum danger.

An explanation for the decline of the city of Rome and the inversed function of the road network in the 6th century is that a hierarchical order was needed to sustain the old Roman network. A disciplined army under competent leadership with an ability to act for a prolonged period of time within rather than outside the network was needed in order to guarantee its security. The long wars did not lead to any definite results except the demographic collapse of the Italian population. For want of real results all combatants allowed their small cavalry units to roam the hinterlands of enemy strongholds. After 533 there was no legitimate central power in Italy. The last emperor, Romulus Augustus, had been deposed in a coup d'état two generations earlier in 476 by the Germanic officer Odoacer. The Ostrogoths, Byzantines, and Lombards could not claim to represent a legitimate power that could guarantee sustainability and mutual flow within the old Roman network. Nor could any of these groups be considered to be native to Italy. A trait shared by all three groups is that they lacked a number of common interests or mutuality with the Italian population, especially regarding sustainability in terms of agriculture and manufacture.

Conclusion

The city of Rome was the ball and chain of the western imperial administration. It could not be sustained in the face of the onslaught of rapid change and had a very limited capacity for resilience as the administration was unable to reform or

³² Mack 1975; Elton 1996, 43–51, 59.

³³ Procopios 6, XXV; Stathakopolous 2004, 275–276.

³⁴ Procopios 5.

³⁵ Sundkvist 2003; Fischer 2005, 92–93.

to finance an indefinite status quo. When the population of Rome had dwindled into that of a regular Roman town, there were no longer any great transports by sea. The old road network, however, could not be used to sustain Rome having become a liability in a new age of asymmetrical warfare. Arles and Ravenna, the two western alternatives to Rome, were advantageous as they could be supplied from the sea, the cheapest form of transport. Located in lagoons, they were easy to defend as any siege would require huge resources beyond the capacity of barbarian invaders. The two alternative residences had relatively small populations while still being able to provide sufficient ideological legitimacy. Rome on the other hand was difficult to defend, had initially a huge population and was difficult to supply. But a puppet imperial administration, pampered with gold coinage, soldiers and food by the increasingly resilient and dominant city of Constantinople from overseas while hiding out in Ravenna, was no solution to the Roman problem. In the end, Constantinople dispatched an Ostrogothic general, King Theoderic, to take over the remains of urbanism in Italy. This he did. But he also set up his own rule where Constantinople wielded little influence. A generation later, Constantinople dispatched its own army against Rome and laid to waste much of the Roman urban mind for good. Arles and Ravenna soon fell back into relative obscurity in the early medieval world, very much like Trier had done a century earlier. The Dark Ages had arrived in Western Europe. This spelled the end for the Roman urban mind.

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|-----------------------------|--|
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| <i>Ordo Urbium Nobilium</i> | Ausonius, <i>Ordo Urbium Nobilium. The works of Ausonius</i> , R.P.H. Green (ed.), 1991. Oxford: Clarendon Press. |
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11. Why Are the So-Called Dead Cities of Northern Syria Dead?

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ABSTRACT

In northern Syria, in the region between the ancient cities of Antioch to the west, Beroea (Aleppo) to the east, Apamea to the south, and Cyrrhus to the north, there is an area with many impressive ruins from Late Antiquity that is popularly known as the “Dead Cities”.¹ This area has attracted the attention of a number of scholars. Impressed by the remains of what was apparently once a thriving society, they studied several aspects of the area, including the architecture and the socio-economic structure. In my view, however, a question that has not been satisfactorily answered is the one posed in the title of this paper. I shall therefore try to point to factors that may help us to understand why this area, where a society once flourished in Late Antiquity, has turned into a stony desert. Were there political, social, economic, or, in short, human-made factors that caused the inhabitants to leave their homesteads? Or was the abandonment of the area due to factors that worked independently of any human action, with such intensity that in the long run the society failed to prove its resilience?

Research, archaeological and otherwise, so far

The remains, well visible on the surface and without need of deep excavation, roused the interest of scholars already in the 19th century. The first to devote close attention to the ruins was Melchior de Vogüé, who presented the architecture of the area in two volumes.²

At the turn of the century, in 1900, the area of the Dead Cities was investigated by American archaeologists of Princeton University under the leadership of Howard Crosby Butler, and the results were published in four volumes.³ Butler investigated the area again in the years 1904, 1905 and 1909, subsequently publishing the material in several volumes during the years 1907–1946.

1 The area is known in French as “Massif Calcaire” (since it is made up of limestone); G. Tchalenko (1953) called it “Massif de Belus”.

2 De Vogüé 1865–1877.

3 Butler 1907–1949. See also his *Early churches in Syria: fourth to seventh centuries*, edited and completed by E. B. Smith, Princeton (1929).

Fig. 1. The Levant in Late Antiquity.
Map by Alicja Grenberger.



After the First World War, when Syria became a French mandate, mainly French archaeologists studied the remains in the area. Among these must be mentioned Joseph Mattern, who provided an inventory of the region and popularised the term “Dead Cities”,⁴ and Jean Lassus, who was mainly interested in the architecture of the churches.⁵ However, for a long time the name most associated with investigations of the Dead Cities was that of another French scholar (of Russian origin), Georges Tchalenko. He worked in the area in the 1930s but his large monograph on the ancient villages of northern Syria was published (in three volumes) after the Second World War.⁶ Tchalenko provided a comprehensive explanation of the phenomenon of the rise and fall of the Dead Cities, and the influence he had on other scholars’ thinking about the area cannot be exaggerated, even if his main hypothesis (which will be discussed below) was incorrect.⁷ Tchalenko’s documentation was continued by Edgar Baccache, who published sketches and photographs of churches in the region.⁸

The French archaeologists did not stop, of course, their work in Syria even after the Second World War. On the contrary, it was intensified and became more systematic, and in due course two major studies of the region appeared, the result of a longer period of investigation since 1976. The first was a collaborative work on a village in the centre of the region, Dehes (French spelling: Dêhès), a

4 Mattern 1933.

5 Lassus 1947.

6 Tchalenko 1953–58. He continued his research on the Syrian Christian architecture and published *Églises syriennes à bema*, Paris 1990.

7 See the enthusiastic review by M. Rodinson (1961).

8 Baccache 1979–80.



Fig. 2. The area of the Dead Cities. Map by Alicja Grenberger.

teamwork under the leadership of Jean-Pierre Sodini and Georges Tate.⁹ The other major work of the two mentioned, by Georges Tate, appeared in 1992, a well-documented study of nearly 50 villages in the region.¹⁰ The data collected by the author led him to conclusions that substantially modified Tchalenko's views.

Another village that has been thoroughly investigated since 1989 is Sergilla (Plates 1, 2), approximately 100 km to the south of Dehes.¹¹

In addition to the fields and houses of individual peasants, the region also included landed property belonging to monasteries. One of them, Deir Dehes, was the object of a larger study by yet another French archaeologist, Jean-Luc Biscop.¹²

The work of these scholars has been continued by, among others, Pierre-Louis Gatier.¹³ Important for the purpose of the article at hand is also the study of the region after its heyday had passed, namely during the Muslim epoch. Research on this theme has been pursued by Ann-Marie Eddé and Jean-Pierre Sodini.¹⁴

Also British and American archaeologists and historians contributed to the study of the region. Their work, devoted to Byzantine Syria, included the Dead Cities. These scholars did not conduct their own independent excavations in the region but instead used the data collected by their French colleagues. Yet the

9 Sodini *et al.* 1980.

10 Tate 1992. Since the work is a "vol. 1", apparently more volumes were planned, but the author died in 2009.

11 Tate 1997b.

12 Biscop 1997.

13 Gatier 2005.

14 Eddé & Sodini 2005.

works of Hugh Kennedy, St Andrews University,¹⁵ and Clive Foss, Boston,¹⁶ are important as they provide an evaluation and discussion of the French archaeologists and set their work in a broader perspective.

Plate 1. General view of Sergilla. Courtesy of Marta Wozniak.



Plate 2. A house at Sergilla. Courtesy of Marta Wozniak.

¹⁵ Kennedy 1985; 1987.

¹⁶ Foss 1995; 1997.

The urbanised region

The Dead Cities region extends over a wide belt approximately 100–150 km long in the north-south direction and approximately 20–30 km wide in the east-west direction. It consists of a plateau, or rather a series of three elevated plains, at an average altitude of about 500–600 m above sea level. No high mountains protect it from possible invasions, especially from the east.¹⁷ It was consequently always open to Persian attacks.

The three parts mentioned, stretching from north to south, are (1) Jebel Simʿān close to the Turkish border, and Ḥalaqa, (2) Jebel Bārīšā and Jebel Aʿla, and (3) Jebel Zāwiye, closest to Apamea.¹⁸ (See Fig. 2)

The architectural remains are all in stone, in a good or very good state of preservation, and as a result modern visitors think they are seeing the ruins of ancient cities. However, the fact that the houses were built of stone cannot be a proof that the Dead Cities were actually cities, since stone was the only construction material available. Today the region almost completely lacks timber, and this was also the case in Late Antiquity.¹⁹ The archaeological investigations conducted by the above-mentioned scholars suggested that the people living there were all peasants, and therefore the Dead Cities of northern Syria were actually not cities in the meaning of the word as a place where people live whose main occupation is non-agricultural. They may, however, be regarded as cities in the understanding of the word as a place where people live in a city-like agglomeration of dwellings of permanent character that exceed a certain number, for instance 50. It is obvious that the difference between the cities of the first type and those of the second is not clear-cut, and in pre-industrial societies the inhabitants of villages (and of cities of type 2) often have other occupations than purely agricultural. Perhaps a better characteristic would be the absence of economic autarchy, and in the understanding of this criterion the Dead Cities of northern Syria were, as it seems, cities, not villages.

There are, however, instances of really large settlements, including El-Bara which stretches for 2 km in length, Brad (in Jebel Simʿān), and Tarutia Emporon and Androna to the east of the plateau (see fig. 1).

However, it has to be pointed out that the settlements referred to here as *Dead Cities* do not remind one of what is normally regarded as a Hellenistic city, which would be natural to expect in this region in Late Antiquity. No specific Hellenistic town-planning is discernible.²⁰ There are no rectangular street plans, no wide public spaces, no impressive public buildings, no colonnades (as in Apamea and Palmyra), and no pylons (as in Palmyra). On the contrary, the streets are irregular, if not chaotic, and the whole settlement seems to have grown organically and *ad hoc*. In contrast to, for instance, the regions of southern Syria and Jordan where theatres are extant, no traces of the latter can be found in the Dead Cities area. The only exception to this otherwise totally rural settlement is the baths, which, however, are not numerous. Neither does epigraphic evidence show traces of Hellenistic municipal authorities of the *boule* (city council) type.

Yet as far as can be judged by mere observation of the ruins, the region was very densely populated in Late Antiquity. The impression of the ancient heyday

17 Tate 1997a, 916.

18 See the map in Tchalenko 1953–58, III, 57.

19 Beams for roofs etc. were imported.

20 Kennedy 1985, 157.

is enhanced by the sight of the area today: the area is almost totally deserted, providing little hope that it can be reclaimed for agricultural activity (cf. Plate 1). It is therefore surprising that the extant remnants testify to the existence of over 700 settlements in the region, of which about 60 are quite well preserved. The average village had about 100 rooms in houses of various dimensions. The criterion of rooms, rather than houses, introduced by Georges Tate, is better suited to the quantitative assessment of the population and its growth. This gives an estimate of 300000 people living in the region in the fifth and the first half of the sixth century AD, that is, during the height of its prosperity. This is an impressive number, particularly as compared to the conditions today. The entire period of the “urbanised” settlement of the area, however, falls between the second and the tenth century AD.

The area can moreover boast of some of the best preserved ancient basilicas (e.g., at Turmanin and Qalblozeh), which owing to their sheer size and rich decoration bear witness to the large and affluent population they once served.

Buildings and economic life

The buildings in the well-preserved settlements are built of rectangular stones (limestone) and are up to 7–8 m high (cf. Plate 2). The homesteads were usually made up of three elements: the building itself, the court and the surrounding wall. Most of the houses had two floors, the lower used for household activities and other economic purposes, and the upper as living rooms and bedrooms. Both storeys opened, atrium-like and often via porticoes, to the courtyard. Thus animals could enter the lower storey, which consequently served at the same time as a barn and shed for sheep but also as storage rooms or a place where oil was produced.

The plans of the buildings are rectangular or quasi-rectangular. There is not much variation, except in the dimensions. The houses were built in the same style for a period of about 500 years (first–sixth century AD). Since the larger ones give an impression of villas belonging to an affluent elite, scholars of the 19th and the first half of the 20th century (e.g., de Vogüé and Tchalenko) concluded that the character of the whole region was that of a landed aristocracy living in comfortable villas. However, since nothing else points to a differentiation based on social and/or economic status, the only explanation that seems valid is that the larger houses, as Georges Tate claimed, are simply those in which the largest families lived, whereas the ratio of space per inhabitant was probably constant. Another argument to the same effect is that all the houses grew over time, thus suggesting that when the families became more numerous the necessary additional housing space was provided.

There are practically no public buildings and hardly any bazaars or shops, and consequently the “normal” village trade must have been conducted in the open spaces between the houses. Olive oil that could be exported outside the region was traded by merchants who were living in small towns adjacent to the region; they came to the villages in order to acquire the merchandise they subsequently sold in cities. In spite of what Georges Tchalenko believed (see below), it is doubtful that the oil produced here was exported overseas.

Investigations carried out by Georges Tate led him to establish two periods of growth in the region, even though he pointed out the potential dating errors

of the archaeological material in a range between 50 and 250 years. Dates were established on the basis of the inscriptions (the absolute majority of which are in Greek) and the type of masonry or other architectural features including ornamentation. The data thus obtained from dated objects could be interpolated to similar items with no dating, so that also the latter could be assessed and incorporated into the statistics and chronology of the remains in the region. Tate assumed that every time a new housing unit was built (i.e., a room) it signified an increase in population by the addition of a new family. In this way Tate was able to establish that the increase in the population was nearly constant from the beginning of the Christian era until the middle of the third century when it abruptly fell. The period of stagnation lasted from c. AD 250 to c. 330, whereupon a new period of population increase followed. The recovery was much quicker and more intensive than was the growth in the first period. Over the 120 years from c. 330 to c. 450 the population grew three or four times as much as the numbers of the stagnation period, and it reached its peak in the last decades of the fifth century, whereupon it diminished over the first half of the sixth century.²¹ The area never regained its previous strength, but it did not suffer total abandonment until the ninth-tenth centuries.

The growth of population in the first period seems to have been due to immigration from the neighbouring areas, which, according to Tate, became overpopulated and caused the peasants to begin cultivating the less fertile areas of the limestone region. The settlers invested enormous amounts of work in their new land. They sowed and harvested but also removed the stones that covered the soil, collecting them in piles and using them as construction material and as boundary markers delimiting one field from another. In this way the “colonists” gained most of the land for cultivation. Since the boundary lines often form quite a regular net, recognizable in aerial photographs,²² it would appear that the Roman provincial administration was responsible for dividing the area into parcels, the purpose of which was probably the assessment and collection of taxes from the tenants.

The second period seems to be characterised by more intensive agricultural activities, as the extension of tillage was hardly possible any longer. The more people living in the area, the fewer the fields per family, but nevertheless the inhabitants still thrived economically. This can be seen by the more robust houses, the construction of which implies the use of special skills which in its turn suggests that the houses were built by specialised masons, who had to be paid. Moreover, ornamentation of the façades of the houses occurred more often during this period. Apparently many of the inhabitants had become wealthier.

The prosperity and its end: Tchalenko’s theory

The wealth among the population, so abundantly displayed in the houses and their decoration, was somewhat puzzling in relation to conditions in the region today, and it needed an explanation. It was Georges Tchalenko who provided one, which owing to its ingenuity and simplicity became accepted for a long time.²³

21 See graphs in Tate 1992, 184, and Tate 1997a, 928.

22 See e.g. Tate 1997a, fig. 13, 930.

23 Tchalenko 1953–58.

Tchalenko saw the wealth in the region as due to oil, produced in a monoculture type of economy. According to his theory the peasants produced olive oil on a large scale, and it was exported in the first hand to the cities nearby and especially “the” city nearby, that is Antioch, which may have had a population of 300000 or more during this time and up to the crisis of the mid-sixth century. Tchalenko believed, however, that Antioch was not the final destination of the oil produced in the region, but that it was exported across the Mediterranean and ultimately reached other cities of the later Roman and Byzantine Empires, including Constantinople.

Tchalenko was guided in his theory by the finds of many oil presses needed for the production of the commodity. The cultivation of olive trees requires a capital investment for several years of work, since it takes about 12 years after the olive trees have been planted before they produce any oil. He therefore believed that it was the rich landowners that drew peasants to the region and provided them with the necessary means to endure the period during which their work could not yield any crops (thus making them debtors), in order to eventually extract substantial profit. He observed that the economic life of the Syrian countryside between the First and Second World Wars was structured in this way. The landowners sometimes lived in the cities, sometimes in residences in the country. Tchalenko regarded the richly decorated houses of the Dead Cities, the “villas”, as the residences of the landowners. For him this was a cogent proof that the economic structure of the region in the late Roman and early Byzantine Syria was organized according to the same pattern as that of the modern Syria.

The end of the most prosperous period of the region coincided with the Persian attack (AD 602–03) on Byzantium, and therefore Tchalenko’s conclusion was that this attack triggered the decline. That it began in those years was also supported by the fact that the last dated inscription was from the year 610. In his view it was the Persians who destroyed the economic base of the region by destruction of the olive tree plantations. With Heraclius’ victories over the Persians and his regaining of control over the Byzantine Syria, the region still could recover and reach its previous economic strength. The next political catastrophe, the Muslim Arab conquests, completely changed the political as well as the economic conditions. The overseas markets for the products of the region were now cut off, which made it impossible for the peasants to resume their once so prosperous activities.²⁴ Deprived of this source of income, the population found itself in the trap of having invested in a monoculture that now turned out to be a curse. The only survivors in this situation were the estates of the monasteries, since within their lands they produced all the agricultural products needed for maintenance of their residents. The monasteries did not seem to have ever been dependent on export, and thus, with their autarchic sustenance and diversified economic life in general, they were not affected by the demise of the market for oil.

Later work (Sodini & Tate)

However, the theory of Tchalenko was based on surveys of the region, not on actual excavations. Therefore, in the years 1976–78 a more systematic excavation

24 A clear application of the so-called Pirenne thesis (1937), attributing the break of the Mediterranean trade to the Arab conquests.

campaign was undertaken by Georges Tate and Jean-Pierre Sodini along with other French archaeologists. As mentioned earlier, this campaign was carried out in Dehes, a rather typical village situated in the centre of the region.²⁵ It turned out that there was no proof of villas belonging to landed gentry, only peasant houses as described above. More important, there was no proof of an olive tree monoculture on an industrial scale. Nor was there any sudden abandonment of the villages for political or military reasons; the settlements continued to exist, albeit without further development, until the ninth–tenth centuries, thus showing, at least for a time, the resilience of the region when facing less amenable political (and also religious, see below) conditions.

Tate analysed 46 villages (out of approx. 700) that contained about 4700 rooms, the latter of which permitted a better assessment of the increase in population (though of course not its decrease) than the number of houses alone. As mentioned earlier, his research showed that there were no public buildings apart from churches and a few baths, and almost no open, public spaces.

In the more densely populated northern area (Jebel Sim'an and Ḥalaqa) the villages were small, about 2 km² in average. In the southern area, Jebel Zāwiye, they were larger, up to 7 km².

The fields are recognizable as either pastures or arable ground. The pedological conditions were relatively good and the precipitation (all according to Tate) was sufficient for agriculture. In any case there are no indications that irrigation techniques had been used. Water for domestic consumption was stored in cisterns. The latter can also be found in the fields, but these were not constructed for artificial irrigation but for watering animals. The olive did play an important role, as is clear from the fact that 245 presses were discovered in the 46 villages investigated, but according to Tate it does not imply monoculture as postulated by Tchalenko. Since the same presses could be used for grapes, the latter should be taken into account as yet another crop. Still other cultivated crops were wheat, vegetables, and fruit trees. People also kept livestock: cattle and sheep, as the finds of stone troughs make clear, as well as poultry. There was some specialisation in agricultural production: while in the north, in Jebel Sim'an, stockbreeding prevailed, in the central Jebel Bārīšā the main crop was olives and in Jebel Zāwiye grains and orchard fruits (cf. Fig. 2).

Another finding that testifies to local production is pottery, although the region is poor in clay. On the other hand there are not many coins, which points to a limited monetary exchange, and since the coins are mostly local the long-distance export was probably not as important as in Tchalenko's theory; it was mainly local.

The villages were not fortified, but the houses were rather densely situated. Occasional open spaces were probably used for markets, though no traces of any facilities for trade were found.

The social structure, as suggested by the housing, testifies to a surprising equality among the peasants, who were independent not *coloni* (landholders).²⁶ There is no evidence to suggest that these were the settlements of large landowners or veterans.

As mentioned above, the economic prosperity reached its peak around the year AD 500. The intensive cultivation enabled an accumulation of wealth,

25 Sodini *et al.* 1980.

26 Tate 1997a.

which is seen not only in the construction of new houses but also in the hoarding of wealth. Examples of the latter, in addition to the more elaborate house ornamentation, are the expensive church vessels in the treasure discovered at Kaper Koraon (Kurin) (see Fig. 2) in the vicinity of the region.²⁷

As stated earlier, the stagnation began c. 550, after which time only a few new houses were built.

The causes of decline

In view of the apparent opulence of the peasants, perhaps rather unique in Antiquity, it is not surprising that scholars have been looking for an explanation why this once clearly prosperous area was abandoned. Several suggestions have been made.

For Howard Crosby Butler the abandonment was due to deforestation and the Arab conquest. The latter was also suggested by both Melchior de Vogüé and Joseph Mattern. This idea was in accordance with the so-called Pirenne thesis, which explained the decline of the Mediterranean trade by Byzantium's loss of the eastern provinces to the Arabs.²⁸

According to Georges Tchalenko, the decline was caused by "overspecialisation" of the region in the monoculture of oil production, which eventually turned out to become the main factor of decline. The Persian conquest at the beginning of the seventh century resulted in, among other things, the destruction of the olive tree plantations. The recovery would have taken several years as the cycle of olive tree growth takes 12 years, but the ensuing Arab conquest in the 630s made such a recovery difficult, and when the overseas markets were cut off from the producers in the Dead Cities region, the production declined and the people began to leave the region.

As mentioned above, Tchalenko's theory was the accepted explanation for decades, but later research by Hugh Kennedy and Clive Foss,²⁹ showed that the decline of the Byzantine eastern provinces, and particularly of the Levantine region, cannot be attributed to the Arab conquest as it began already a century earlier. The decline was triggered by catastrophes such as recurrent earthquakes (the so-called seismic crisis of the sixth century) and plagues, including the bubonic epidemic during Justinian's reign. The Dead Cities area shared the vicissitudes of its markets, Antioch and other north Syrian cities, with the exception perhaps of earthquakes, which seem to have afflicted the Levantine coast rather than its hinterland.

Tate arrived at similar conclusions, suggesting (in contradiction to Tchalenko) that the stagnation was ushered in not by curtailment of oil export, but by the series of known disasters: the Persian invasions, bubonic plague, drought and famine. From the mid-seventh century onwards the living conditions deteriorated, but nonetheless the region remained occupied throughout the eighth century, after which time it was gradually abandoned. The common denominator is a Malthusian situation: an overpopulated area, with the exploitation of its natural

27 Mango 1986; Boyd & Mango 1993.

28 Pirenne 1937.

29 Kennedy 1985a; Foss 1997.

resources stretched to the maximum, had eventually led to population decline and gradual abandonment of the region.

Additional factors accounting for decline

A satisfactory explanation for a complex socio-economic process such as the decline of the economic life and the abandonment of the Dead Cities by their inhabitants cannot be simple to its nature. Obviously no one single factor can be accepted as a sufficient explanation, but rather a combination of factors.

Even though Tate did suggest several factors, his explanation is not entirely convincing. One can agree that the olive tree monoculture, with its structurally in-built risks, was hardly a reason since, on the one hand, there was never such a monoculture and, on the other, the demise of the Mediterranean trade would not have hurt the producers in the Dead Cities area as the oil was probably never exported over a long distance; instead it was consumed within the area and in the adjacent towns and large cities, including Antioch, which were never cut off from the producers. As far as the critique of Tchalenko's theory is concerned, one cannot but agree with Tate. One can also accept that the plague and other Malthusian factors played a significant role.

However, these factors would lead to stagnation of the economy and population, rather than to the total depopulation of the area. The surplus of population that cannot be supported by the resources of a given region may lead to emigration of a certain percentage of the inhabitants who can no longer live off the soil, but not to total abandonment. This means that the people should have stayed, albeit less densely distributed, and the Malthusian balance would have been restored on a lower level.

Therefore, I believe that the search for explanation has not ended, and some additional factors have to be considered while others need to be reconsidered.

One factor that has not been discussed so far is taxation. Admittedly, Pierre-Louis Gatier mentioned that the theories of the economic crisis of the Roman Empire that emphasised the overtaxation of the rural population should perhaps, in view of the extremely strong development of the region of the Dead Cities, be corrected.³⁰ But the fact that the farmers of this region thrived despite the Byzantine taxation does not necessarily imply that the same is true regarding the Muslim taxes. An overlooked fact seems to be that there is no evidence of any mosques in the region. This suggests that the population did not convert to Islam, but remained Christian for three centuries of Muslim rule before totally abandoning the region. Consequently, in addition to the Malthusian factors one has to take into consideration an additional potential cause of decline, namely the tax burden that – as far as the non-Muslim population was concerned – was made up of two components: the *haraj*, land tax, and the *jizya*, poll tax.³¹ The latter, with its base in the Qur'an (Sura 9, 29), was imposed over *dhimmis* (non-Muslims living in the Muslim state or states) already by the early caliphs and maintained subsequently for a long time, as one of the conditions that the *dhimmis* had to accept. In some areas, such as Persia, the taxes were a successful method of religious propaganda, to the effect that within a few decades after the Arab conquest the

30 Gatier 2005.

31 Løkkegaard 1959.

Persian landowners converted to Islam. Thereby they avoided paying the above-mentioned taxes (the Muslims paid only the religiously motivated *zakat*, much smaller than the *haraj* and *jizya*), thus removing the economic burdens that might have made it difficult for them to keep their lands, but also opening the way for political and military careers in the Muslim state apparatus and army. The lack of mosques in the region in question is a proof that the Christians of the area did not choose the same option. Admittedly the region, being already overpopulated and in decline, did not encourage the Muslim Arab immigrants (nomads) to settle there. Of course many other Christian communities, in Syria and Mesopotamia as well as Egypt, did not convert either and yet survived. But they did not live in an area that was already economically overburdened and to which an additional burden could be the death blow.

How do we know that the peasants were really under such strong economic pressure? The fact is we do not. We see only the result: depopulation, whereas the deteriorating economy is merely a hypothetical explanation for it. What we do know is that their economic performance just before the decline was extremely impressive. Neither before nor after the Roman and early Byzantine epoch was the region so economically vibrant and at the same time so densely populated and urbanised, and on top of that, with a measure of luxury. Societies with this sort of economic performance do not decline easily just because they have a surplus of population. The Malthusian balance can easily be restored by partial emigration, and there is no reason to assume that this would cause the remaining population to go under.

It is true that until the Arab conquest the economic Malthusian causes were not strong enough to destroy the basis of the livelihood of the Dead Cities' population. It is also true that the Muslim taxes and their effects have to be studied in more detail, but these can only be an additional cause of the decline of the region, since it began before the conquest. Moreover, as mentioned above, the region survived one crisis around AD 300 and grew even stronger as a result. Therefore, the question is, why did it not manage to survive yet another crisis?

I believe that yet another cause should be sought in a totally different sphere, one which the scholars did not completely overlook but which they were unable to investigate properly because the data available at the time, and even as late as a decade ago, were not extant or sufficient. The cause in question is climatic deterioration.

Climatic history

Recently collected climatological data from the Near East (e.g., Gölu, Turkey) suggest that in the sixth century AD the climatic conditions deteriorated for a time and became drier than in previous dry episodes. This must have affected the agricultural production.

Several climatological studies conducted in recent years are now available and provide some interesting data for the broader region of Syria and Asia Minor. According to Schilman *et al.*, the moist period reached its peak in AD 650, followed by a more arid period that lasted until 1050.³² Pollen analyses provided by Neuman *et al.* show a rapid decrease in *Olea* (olive), *Juglans* (walnut) and *Vitis*

³² Schilman *et al.* 2002.

(grapes) between the years AD 683 and 1099, which confirms what we already know from archaeological data, even though the latter do not say anything about the causes.³³ Another study carried out by the same team of Neuman *et al.* confirms that the period between 683 and 1099 was one of more arid conditions.³⁴ The research of Stevens *et al.* shows that a dry interval began earlier, in AD 450.³⁵ Also an investigation of pollen and sediments conducted by Kaniewski *et al.* shows an aridification trend from c. 650 onwards to the effect that marsh areas dried out.³⁶

It would, however, be a simplification to say that all the climatological data available today are univocally conclusive as to the aridification of the conditions in Syria, which coincides with the decline of the region of the Dead Cities. There is need for more investigations and for deeper analyses than those used in the present pilot study.

The thesis of the present paper – which I intend to develop in a later study – is that this climate change was a factor that contributed to the economic decline and subsequent desertion of the area, eventually turning it into “dead cities”.

One has to keep in mind that the Dead Cities of northern Syria is not the only region that developed so well during the late Roman and early Byzantine epoch. Similarly propitious conditions (climatic and otherwise) also brought to life the southern flank of Syria with Hawran, Decapolis, Transjordan and Negev (see Fig. 1). Here, too, a previously half-deserted land was brought under cultivation, and the civilisation that developed here disappeared roughly in the same epoch as that of the Dead Cities, leaving most of the territory as arid as can be seen today. It is also here that the ruins of cities (in the proper meaning of the word) even more impressive than those of the Dead Cities region – with monumental Greco-Roman architecture, including theatres like the one in Gerasa/Jerash – are often found today in the desert. The settlements survived the Arab conquest and even developed during the early Umayyad epoch, but eventually were abandoned, and the areas in which Idumeans and Nabataeans once flourished can hardly be reclaimed for cultivation today except by using modern technical equipment and financial means, which, of course, the ancient Nabataeans did not have.

Consequently, with regard to the decline of the Dead Cities region, I cannot see any other cause, or any combination of causes, that is as strong as the deterioration of the climatic conditions. Much of the territories of the Near East in Late Antiquity survived, no matter what political or social changes took place. Yet some of the areas apparently did not, having been more exposed than the others to climatic changes, though not necessarily dramatic such. Here the concept of the marginal land plays an important explanatory role. Marginal zones – in this case the one practically on the border of the Syrian Desert – which were not as attractive as the areas of regular rain-fed agriculture, may have been taken into cultivation only when they received enough precipitation for vegetative growth to occur. It is not enough that the adjacent areas of the rain-fed agriculture suffer from overpopulation, and that there are people ready to take the risk of invest-

33 Neuman *et al.* 2007a.

34 Neuman *et al.* 2007b.

35 Stevens *et al.* 2006.

36 Kaniewski *et al.* 2007. I am indebted to Karin Holmgren and Martin Finné of the Department of Physical Geography and Quaternary Geology, Stockholm University, for their guidance in climatological problems, including their help in directing me to relevant research results.

ing work and other resources in order to reclaim less promising territories for cultivation. Given the pre-modern technical facilities and abilities, such an endeavour would be feasible only under more propitious climatic conditions. Life in marginal areas is always more exposed to climatic fluctuation. When the climatic pendulum swings the other way, even if only slightly, the marginal areas are much more endangered than the areas that usually have more abundant precipitation, such as the coast of Lebanon. Climatic changes that have minimal impact on the well-watered areas could have serious consequences in the marginal zones, even to the extent that living conditions become impossible for sedentary communities. And such, I believe, was the case of the Dead Cities.

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Abbreviation

BAH – Bibliothèque archéologique et historique, Institut Français d'Archéologie du Proche Orient.

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12. Lost in the City: An Essay on Christian Attitudes towards Urbanism in Late Antiquity

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ABSTRACT

From the outset, Christianity was disseminated among middle class citizens in cities. Early tracts admonish the Christian town-dwellers to be faithful, modest, and decent and not to indulge in the pagan way of life; but they are not taught to observe any special habits specific to believers, nor are they admonished to shun urban environments. Probably, Christian asceticism was promoted by a heartfelt insufficiency, kindled by those passages of the Bible that presuppose an abstemious lifestyle and writings that idealize celibacy, together with contemporary negative attitudes to urban social life. The orthodox Fathers took exception to erroneous reasons for asceticism, such as loathing for creation itself, but otherwise encouraged people to practise it for their spiritual development.

It seems that Christian ascetics initially stayed in their urban environment, but subsequently were expected to flee towns and villages. Nevertheless, proximity to population centres remained vital for sustaining life for anchorites in their hermitages and monks in their monasteries. After the originally free and anarchic asceticism had been brought under control, monasticism was fully accepted and encouraged in the vicinity of population centres. Although the ideal of a life in severe austerity, continence, and retirement from “the world” was widespread and practised by many leaders of the church, the refined Hellenistic urban culture still exercised a deep influence.

The desert monasteries constituted a kind of “extended city”, whose inhabitants continued in self-discipline. Nevertheless, these monasteries complied with the broad criterion of what constitutes a city. What had begun as a counter-urban movement had become a well-organized desert society consisting of a great many small urban centres. The maintenance of this “extended city” was susceptible to disturbances in society; detrimental to its resilience was the decline in population as well as the Islamic rule, which alienated the Orient from the Christian world.

Introduction

From the very outset, Christianity was an urban phenomenon. It spread from Palestine to Syria to Asia Minor, and to the coasts of the Mediterranean along the limits set by the geographic and administrative structures of the Roman Empire.

Consequently, the ecclesiastical organization almost inevitably became a mirror of the secular, which means that bishops resided in cities, and metropolitans in provincial capitals.¹ Parallel to this urban development, there was a growing ascetic movement which in general shunned urban life and society at large. This chapter will touch upon attitudes to urban life among laity and church authorities up to the middle of the sixth century AD.

A saint in the city

In his youth John Chrysostom (347–407)² lived with extreme asceticism and became a hermit, but health problems forced him to return to Antioch on the Orontes where he was born. Ordained as a priest there in 386, he saw around him the poverty that was built into the structure of urban life; and echoing themes from the Gospel of Matthew he called upon the rich to help the poor. The largely pagan city of Antioch favoured a sensuality that was hateful to the former hermit. Deeply suspicious of profane life he attacked the pagan customs. He censured not only typical urban amusements such as water shows, stage plays and horse races, but also participation in traditional wedding processions with song and dance, and events that encouraged indulgence in the delights of the marriage bed. His vision was to create a new form of urban community by stressing the dignity of the Christian household. He was opposed to the old idea that looked upon the procreation of offspring as a civic duty, since this encroached on the privacy of matrimony, and he defended family life as a remedy against the beguiling pleasures of the city.

Appointed archbishop of Constantinople in 398, John kept his abstemious attitude towards luxury and refused to host lavish social gatherings for the rich. He adhered to this behaviour even though he was living in the capital that housed the sanctuary of the king and the royal residence (cf. Am 7:13), and it rendered him unpopular among the wealthy citizens as well as the clergy. His agenda, the engagements he had to keep, were of another kind and followed a different logic than that of the mundane capital. His reluctance to share its urbane, refined life proved fatal. A dishonest alliance, headed by Queen Eudoxia, had him exiled and within a few years he died from the hardships of his banishment.

The story of John Chrysostom shows how difficult it was – and always has been – to create a balance between a positive outlook on social and urban life and a reserved – if not negative – attitude to society. The essence of the problem is likely that *civitas Dei* and *terrena civitas* (in Augustine's terms) are invisible communities in the present world, interwoven and intermingled, and cannot be defined after outward conditions and what is visible to men's eyes.³

1 Foss 2002, 71–95.

2 For the following, see Brown 1989, the chapter “Sexuality and the City: John Chrysostom.”

3 Augustine, *De civitate dei*, book 11. See also van Oort 1997, 157–169.

The city in the bible and the ancient Orient

To begin with, the biblical attitude towards cities is ambiguous.⁴ On the one hand, Cain, the first person to commit a murder, was also the first to build a city; he safeguarded himself and his power behind city walls. He was followed by Nimrod who established a kingdom, the centre of which was Babylon – the biblical symbol of evil and enmity against God.⁵ In spite of the prophets' heavy criticism of urbanity as a source of evil, luxury and violation of justice (Isa 3:16ff; Am 6:1ff. and Mic 3:11), the prophets apparently did not consider the city as such as the essential problem, but rather the inhabitants. In the New Testament, the Book of Revelations shows the same ambiguous attitude: the city occurs both in the figure of the harlot, Babylon, and in the bride, Jerusalem, that is, the epitome of sinful and saintly cities. As a powerful metaphor the city has the potential to arouse both attraction and aversion.⁶ In fact, several biblical passages, such as Jer 2:6; Deut 8:15 and Job 38:2, describe the desert, not the city, as a place of curse and death. Thus, Ps 107:4 depicts the hopeless situation of the children of Israel in the barren wilderness, the dreadful desert where no man can live: "they wandered in the wilderness, a trackless desert, finding no city to settle in"; and Ps 104: 20ff. presents night and day as the wild sphere as opposed to the urban: "night falls, and all the beasts of the forest prowl [...] the sun rises and they steal away, they return and lie down in their dens; then man goes out to his work, to his labour until evening". In these passages the city actually stands out as the quintessence of safety and a well-organized life.

In contrast to John the Baptist, Jesus was no ascetic; he did not go out into the wilderness except on certain occasions. He stayed in towns and villages and taught people by examples taken from daily urban life, for instance a parable about a persistent widow who complains to an unjust judge (Luke 18:1–8) and one about children who sit in the market places (Matt 11:16–19). It is explicitly stated that people from the cities of Decapolis were among those who followed him in the beginning of his activity (Matt 4:25).⁷ Also, it was in the setting of the dark reality of urban life, such as fornication and prostitution, that he proclaimed divine grace and forgiveness (Luke 7:36–50 and John 4:5–26). Jesus took for granted that his name would be proclaimed in the cities: "When you are persecuted in one city, flee to another!" (Matt 10:23). From the Acts we learn that the Gospel was proclaimed in the important cities of Jerusalem, Sebaste,⁸ Caesarea, Antioch, Athens, Ephesus, and Rome.

4 The current word for "city" in Hebrew, *'ir*, apparently connects with the verb *'ir* "to wake", which means that its basic sense is a protected place. The word, so general in sense, is often defined by another noun: *'ir hōmā* "a walled city" and *'ārē p'razzī* "unwalled villages". In the cognate Semitic languages, Phoenician and Arabic, "city" is *qart* and *qarya*. The verbal root, then, is *qry* "to meet", which likely relates to an intersection of roads. In Aramaic, "city" is *karkā*, which connects to the verb *k'rak* "to enclose". The old Oriental city was, thus, primarily a walled settlement, the centre of a region and a place where roads intersected.

5 Cf. Gen 4:17 and 10:9f; Gill 1979–88, 713–715.

6 Rāpple 2004, with special reference to p. 120; cf. also Eaton 2002, 25ff.

7 Scythopolis and Philadelphia were re-founded before 198 BC, and Gadara and Gerasa (cf. Mark 5:1) somewhat later. See Otto 1970–, E. the article *'ir*, cols. 56–74, with reference to cols. 67f.

8 I.e. "the city of Samaria" (Acts 8:5).

In the wake of Alexander's conquest of the Orient, cities sprouted up all over the map, like a "second urban revolution". These cities – or rather city-states – were connected by roads and constituted an organized, homogenous, and considerably secure society, with an originally Greek, urban, upper class and an Aramaic speaking, mostly rural, lower class. Later on, population growth in the Levant spurred the emergence of new towns in sparsely inhabited areas.⁹ Subsequently, rural population centres grew in size and independence. Three types of settlements were reckoned with, namely the village (*chórion*), containing about five hundred inhabitants, the much smaller hamlet (*agridion*), and finally, the estate (*proasteion*).¹⁰ Also, the crises of the third century AD, in the form of military anarchy, civil wars and invasions, entailed that formerly open Roman cities were now fortified, surrounded by high walls and towers, thus taking on an appearance characteristic of cities in the ancient Orient and even in the West until modern times.¹¹

It was in cities with a mixed population of Jews and Gentiles (cf. Acts 15:21) that Christianity was disseminated among middle class citizens, craftsmen and tradesmen – mobile townspeople with houses and, if possible, slaves of their own – and not in rural environments among more or less ascetic-minded people.¹²

Christians in an urban environment

There are some remains of pre-Byzantine Judeo-Christian churches in Capernaum and Gischala in Upper Galilee.¹³ Otherwise, except for Jerusalem, Sebaste and Nablus, it seems that the Hellenistic population on the coast of Palestine was more open to Christian preaching than in the rest of the province. Eusebius (c. 263–339), when recounting the trials of the martyrs in *The Martyrs of Palestine*, mostly mentions cities on the coastal plain, namely Gaza, Ascalon, Jamnia, Diospolis (Lydda), Eleutheropolis (Beit Guvrin), Caesarea and Tyre, in addition to Scythopolis, Gadara and Phaeno (in the Negev).¹⁴ The list of cities, whose bishop attended the Council of Nicaea in 325, corroborates this picture. True, there is some disagreement among the manuscripts: as opposed to Ascalon, Ashdod, Jamnia, Diospolis, Eleutheropolis, Caesarea, Ptolemais (Acre), Nicopolis (Emmaus), Jericho and Scythopolis (Beth-Shan), the cities of Jerusalem, Sebaste and Nablus do not occur in *all* manuscripts, but this does not change the overall picture. It definitely seems that pre-Byzantine Christianity in Palestine was concentrated to Hellenistic urban centres.¹⁵

From a Graeco-Roman point of view, human development can be measured in the building of cities. The city is not a mere population centre but primarily a political and well-organized society. Urban life divides civilization from the

9 Sommer 2006, chapters: "Die Seleukiden und die zweite urbane Revolution", 96–102, and: "Rom und die dritte urbane Revolution", 107–116.

10 Kazhdan 1997, 44f.

11 Foss 2002, 72f.

12 Meek 1983, 73. For ascetic movements within antique Judaism, see Betz 1993, vol. 10, pp. 386–391.

13 See Bagatti 2001, 72–78 and 190–195.

14 Lawlor & Oulton 1954, 327–402.

15 Some lists include Gaza, Aila (Eilat) and Maximianopolis (Lejjun near Megiddo), as well as Capitolias (Beit Ras) north of Irbid in Jordan. See further Wilken 1992, 739; and Stemberger 1987, 50f. For the lists of bishops, see. Gelzer *et al.* 1898.

horrifying wilderness in which the barbarians are obliged to reside.¹⁶ Christianity spread in urban environments. Not least, it spread in the large cities such as Antioch on the Orontes, Rome and Alexandria.¹⁷ In the large cities, such as Rome, Christians of the lower classes lived in tenement-houses without water supply and with a limited access to light and open air; only the private villa residences had a garden. Lacking a kitchen of their own people had their meals in dining rooms with catered food; of course, there were taverns as well, but these often served as brothels. Daily life was, accordingly, rather dreary, and in contrast to people in general, Christians took little pleasure in the amusements that were offered. But not only believers – aloof from the world – found the superficial glamour of a metropolis like Rome base and gloomy, occasionally even a misanthropic pagan poet like Juvenal (50–127 AD) animadverted upon urban life. In *Satires* 3:62–65 he laments the Oriental influence: “The Syrian Orontes has long since poured into the Tiber, bringing with it its language and manners, its flutes and its slanting harp-strings; bringing too the timbrels of the breed, and the girls who are told to offer themselves for sale at the Circus.”¹⁸

Indeed, horse races, gladiatorial fights, theatres and public baths were places of erotic rendezvous. In the crowded stands, physical contact between the sexes was almost inevitable; stage plays of the time were burlesque and full of coarse jokes; and the mixed public baths were embellished with elaborate erotic art. Western cities were full of vain pursuits, of taverns, theatres, brothels and trafficking with girls from the Orient. The opportunities for sexual experiences are described in detail by Ovid in his *Ars Amandi*.¹⁹

Insofar as they saw no conflict with their belief, Christians as loyal citizens took part in the urban life and its exchange of goods and services. In his *De idolatria*, Tertullian of Carthage (c. 160–220) includes above all participation in horse racing and theatrical performances, making objects for pagan cults and trade in incense (used for idolatry), as well as public offices that presuppose participation in pagan cultic activities.²⁰ Tertullian’s kind of memorandum-book is strict and consistent in its reasoning on urbanity: Christian urban life must never involve a lenient attitude towards a mundane lifestyle.

Christians, however, did not abandon city life. The anonymous apologetic work of the second century, *Epistle to Diognetus*, says in defence of the Christians: “For nowhere do they live in cities of their own; they do not use any strange form of speech or practise a singular mode of life,” whether in “dress and food and other matters of living” (5.1).²¹ Also, the late first-century pastoral manual *Didache* gives the impression that Christians form congregations in their hometowns, where newly arrived fellow believers are welcome to settle and engage in handicraft trade: “Everyone who comes in the name of the Lord is to be welcomed [...] if he wishes to settle among you and is a craftsman, let him work for his living.”²²

The third-century pastoral manual, *Didascalia*, written somewhere in Roman Syria, opposes those who teach that one should not marry, or eat flesh or anything

16 See Kunst 2008, 7f.

17 At the end of the first century AD about one million people lived in Rome, and c. 600 000 in Alexandria. . Cf. MacMullen 2009, 101f., 163, 150.

18 Juvenal, *Satires*. See also Kunst 2008, 50ff.

19 Cf. Ingemark & Castoriano 2007, especially 52–60.

20 See Schöllgen 1990.

21 *Epistle to Diognetus*.

22 *Apostolic Fathers* 12.1–3.

that has a soul in it.²³ On the contrary, *Didascalía* exhorts men and women to keep matrimonial fidelity and avoid habits that might lead others into temptation, including typical urban phenomena such as attractive garments and mixed bathing. However, if a mixed bath is the only available facility, women should observe moderation and choose to go there when it is less crowded, not every day, and in complete decency – in the same way as they should not draw attention to themselves in public, but walk straight ahead with lowered eyes and covered hair (Chaps. 2,3). In addition, a biting remark states that the fervour of the pagans for amusements, and the Jews' zeal for the Sabbath, should impel the Christians not to show less ardour for their service, and consequently to stay away from pagan fairs (Ch. 13).²⁴

The early tracts such as *Epistle to Diognetus*, *Didaché* and *Didascalía* admonish the Christian town-dwellers to be faithful, modest and decent in their relations with people. As strangers and pilgrims on earth on their way to the heavenly city, the believers must not indulge in the pagan way of life; but they are not told to observe any special habits specific to believers and to be carried out in their own lives, nor are they admonished to shun urban environments and the public services offered there.

The ascetic ideal²⁵

Early pastoral admonition left little room for asceticism – i.e., a life in severe austerity, renunciation of matrimony, and withdrawal from society – but the second century saw the creation of a new type of Christian literature, the Apocryphic Acts, influenced by the Hellenistic novels and romances. Their purpose was to entertain and simultaneously inculcate ascetic life as an ideal. The second-century *Acts of Paul and Thecla* (c. AD 160) actually offers a new version of the Beatitudes: “Blessed are those who keep the flesh pure, for they shall become the temple of God. Blessed are the continent, for to them God shall speak [...] Blessed are the bodies of virgins, for they shall be well pleasing to God.”²⁶

When considering the reasons that early Christians favoured an abstemious life, one must not overlook that the ascetic dimension of the New Testament was the main source of inspiration. Jesus presupposes that his disciples practise fasting (Matt 6:16), and St. Paul in 1 Corinthians is not adverse to temporary abstinence from married life or even refrainment from matrimony for the sake of the Gospel. The opening words of 1 Cor 7 run: “Concerning the things of which you wrote to me: it is good for a man not to touch a woman; but to avoid fornication let each man have his own wife”. The initial statement was commonly understood as Paul's own verdict and not as referring to the question posed by the addressees.²⁷

23 Modern research in the vein of Bauer 1971, is inclined to regard early Christianity in Syria as by and large “heretic”; but Bauer has little to say about such an early witness of “orthodoxy” as *Didascalía*. In Appendix 1: On the Problem of Jewish Christianity, G. Strecker argues that *Didascalía* was composed in the part of Syria where Jewish Christianity occupied a dominant position, see p. 257.

24 See *Didascalía Apostolorum*, 12–27, 135–141.

25 For an overview, Rubenson 2007.

26 See *Acta Apostolorum*, 238–240; cf. Merkt 2008, 17.

27 For a history of interpretation see Schrage 1995, 74–88.

The feeling of falling short in the struggle against the ubiquitous, beguiling enticements of mundane, urban life made many Christians take a radical position towards what might be called social normalcy. The idea of abstinence from married life is encountered as early as in the *First Letter to Clement*, c. AD 100: "He who leads a chaste life must not glory in it, knowing that someone else bestows him the power of abstinence."²⁸

The rival of orthodox Christianity, namely Gnosticism, albeit in practice very similar to orthodoxy, had its own agenda: the *Gospel of Thomas* (c. 140–150), *logion* 22, does not approve of the very laws of Nature, as it stipulates that the disciples cannot enter the Kingdom unless they, "make male and female into a single whole, so that the male will not be male and the female be female". Demands for permanent continence are found in other heterodox writings, such as the originally Syriac *Acts of Thomas* (3rd century), which among other things relates how a newly wedded couple in their bridal chamber meet Jesus; he admonishes them to abstain from the filth of matrimony, so the young couple decide not to consummate their marriage.²⁹

Also, the exegesis of the Fathers is distinguished by a tendency to lay stress on biblical models calling for imitation and careful highlighting of particular details; for example, both Elijah and John the Baptist lived the life of a Nazarite, abandoning the comfort of society and performing their duty without concern for shelter or food, while Abraham abandoned his homeland for the promised land. He married Keturah at such an old age that he could hardly have felt any lust; and Isaac did not marry before he was beyond the age of passion.³⁰ In this vein, Eusebius in his *History of the Church*, 2,23, reports appreciatively that James the Elder, leader of the congregation in Jerusalem, "drank no wine or intoxicating liquor and ate no animal food; no razor came near his head; he did not smear himself with oil, and took no baths [...]; he was often found on his knees beseeching forgiveness for his people, so that his knees grew hard like a camel's".

At the same time, orthodox Fathers such as Clement of Alexandria (c. 150–215), Tertullian (c. 160–220) and John Chrysostom are eager to point out that the reason for abstaining from marriage must be holy and not stem from hatred against the Creator and his creation. They take exception to men like Tatian, Marcion, Montanus and the Manicheans. Clement says: "Those, who ungratefully and out of hatred against the body want to abstain from conjugal union and appropriate food, are ignorant and blasphemous; they practice a foolish abstinence as most of other pagans."³¹

Tatian (c. 120–180) was most likely among those who exercised a deep influence on Syrian asceticism. On return to Edessa after a stay in Rome, he founded an encratic sect that forbade meat, wine and marriage so as to favour an angelic life; he went so far as to label marriage "corruption and fornication" (*phthora kai porneia*). True, Tatian was attacked by the defenders of orthodoxy, but significantly enough he was *not* the target of any criticism in Syria during the time.³² The adherents of Marcion of Sinope (c. 85–160) and the followers of the Phrygian prophet Montanus, (2nd cent.) likewise promoted asceticism and the ensuing renouncement of marriage. In Susanna Elm's words: "For these men and women

28 *Apostolic Fathers*, ch. 38.2.

29 See *Gospel of Thomas*, *Acts of Thomas*, 70f., 192ff.

30 Cf. Clark 1999, 104–113.

31 Clemens Alexandrinus, *Stromata* III: 60,1.

32 See Gribomont 1993, 211f.

the demands of asceticism superseded all those constraints and commandments which constitute the order of society. They did not obey, they did not work, they did not procreate, they did not distinguish between slave and free, male and female.” For them it was natural to interpret Luke 20:35f, “those who are considered worthy of that world do not marry [...] for they are like angels”, as pertaining to the present life. In view of an impending doomsday, the faithful should prepare themselves by leading a life in total continence – like the angels.³³

In the centuries to come, asceticism constituted a strong undercurrent among Christians in Syria and Mesopotamia. Their way of reasoning may be illustrated by Bishop Aphrahat of Mar Mattai in Persia (c. 270–345): From the frequent New Testament references likening the community of the faithful to Christ’s bride, he concluded that the Christian baptism literally means to wed Christ, the heavenly groom, and thus demands a life in celibacy. Christians should therefore stay single so as to retain their virginity (*b’tūlūtā*) – and if in wedlock abstain from married life – for an angelic life in sanctification.³⁴

Indisputably, Greek philosophy, be it of a Platonic, Neo-Pythagorean or Stoic outlook, also exercised a profound influence on Christian monastic literature; but it hardly affected the first generations of ascetics.³⁵ What, then, was the foremost reason for a life in celibacy and severe chastisement of the body? This question has baffled scholars for decades.³⁶

From the time Christianity got the upper hand, an abstemious life was apparently a way for ardent believers to mark distinction from their less serious new co-religionists. Especially for upper class women, a monastic life was a commendable alternative to marriage and childbirth; and by choosing a life in seclusion and severity, well-to-do men could flee burdensome civic duties and eschew hierarchical control. Obviously, inner conviction and outward feasible conditions were intertwined. Tor Andrae concludes his discussion of why thousands of third-century Christians left their homes to live as hermits, by stating that their first reason was *religious*, to check their desires; their second reason was *metaphysical*, to subdue their body, the prison of the soul; and their third reason was *philosophical*, to train their mental ability through privation. His concluding remark is: “Here, as so often in the psychology of religion, one has to keep in mind that in the beginning there was no rational motivation, but rather action itself.”³⁷

Notwithstanding the ascetic dimension of the New Testament, Christian asceticism likely originates in an individual experience of insufficiency and an endeavour to find relief from it. Various religious practices – including asceticism – may well be viewed as responses to contemporary ideas rather than as rational inferences drawn from a religious system. For whatever reasons, the ascetics struggled to overcome the enticements of “the world” by rigorous self-discipline, while the orthodox Fathers rejected the erroneous motivation for asceticism but

33 See Elm 1994, 195.

34 See Gribomont 1993, 214f. and 218f. Whether the esoteric dualism of Manichaeism developed independently (as stated by Vööbus 1958, vol. I, 158–169), or under the influence of ascetic Mesopotamian Christianity (as stated by Brown 1989, 197f.) is beyond my power to judge.

35 As to the element of Hellenistic dualism in Theodoret’s (c. 393–457) *Historia religiosa*; see: Goehring 1992, 248f.

36 See e.g., Guillaumont 1977 and Clark 1999, 18–33.

37 Andrae 1947², 57f.; cf. Neusner 1992, 20.

otherwise encouraged people to chastise their bodies so as to promote their spiritual development in a truly philosophical way of life.

Forms of ascetic living

Susanna Elm remarks that several models of ascetic life coexisted; in Egypt as well as Asia Minor there were three distinct categories, viz., “ascetic life within cities and towns, ascetic life in isolation in the desert or the countryside, and ascetic life ‘in between’, in areas a little way beyond the boundaries of the village or town, though not in the desert proper.”³⁸ The great interest in monastic life, whether in solitude or in the community of a monastery, has overshadowed the possibility of a life in continence at home in that women simply decided to adopt an ascetic lifestyle, either staying in their parental house or, as widows in their own homes, cf. 1 Cor 7:37–38.³⁹ James Goehring points to an Egyptian document from AD 324 which by the Greek word *monachós* (monk) understands a Christian ascetic who lives in the city and takes part in its life. From this he draws the conclusion that the man in question belonged to a broad apotactic movement, that is, people who renounced the prevalent regular order but did not necessarily shun urban life.⁴⁰

Scholars nowadays agree that whereas Egypt was the cradle of monasticism, the yearning for a life in completely solitary contemplation, hermitical asceticism, originated in Syria. Although the hermits of Syria fled urban life, withdrew to the mountains and even mounted pillars – as did the most famous among stylites St. Simeon (d. 459) – they were still not as secluded from people as one might suppose: “Whatever one may think of Simeon’s asceticism one thing is clear: his contributions to society were concretely constructive,” says Susan Ashbrook Harvey.⁴¹ Accordingly, the anonymous *Syriac Life of St. Simeon Stylites* informs us that the inhabitants of Simeon’s village, Telneshin, who were obviously eager not to lose the benefit of this holy man, staved off Simeon’s decision to flee their place for the remote part of the desert. They beseeched him and declared themselves willing to build an enclosure for him on the nearby mountain where he could chain himself to a rock, which he did. As Simeon finally ascended his pillar, he certainly lived apart from people, yet still stayed in touch with them: he actually combined austere asceticism and public preaching to people who gathered around his pillar, not least temporarily unemployed olive harvesters from all over northern Syria. As a holy man, he was also a man of influence in the rural society and a proponent of the rights of the poor against the landed nobility.⁴²

Viewed from the Egyptian desert, average Christians leading a decent life in towns and villages were nevertheless part of “the world”. Consequently, the desert represented a “counter-world”, a place where an “alternative city” could

38 Elm 1994, 331.

39 Such as Macrina, the elder sister of Gregory of Nyssa (c. 335–after 394), see Elm 1994, 39–47.

40 Goehring 1992. Cf. also Merkt 2008, 14f. In addition, hagiographies normally begin by mentioning the hometown of a saint, which implies that cities were held in esteem, cf. Classen 1980, 22.

41 See her foreword to *Lives of Simeon Stylites*, 9.

42 See *Lives of Simeon Stylites*, 118, and Brown 1990, 397ff.

grow.⁴³ The easy and resolute way to disengage from “the world” by physically moving from one zone to another, apparently appealed to those who experienced a heartfelt insufficiency and struggled to find relief from it. Anthony (c. 251–356), the most prominent figure of eremitic monasticism in Egypt, at first withdrew to the outskirts of his home village, where the tombs marked the boundary between desert and settled land; only later did he move across the Nile into a deserted fortress. His disciple, Pachomius (292–346) established a number of walled hamlets for monks along the Nile. Although his biographers stress that he chose desolate neighbourhoods, archaeological evidence suggests that the places where he built his first monasteries were not as desolate as the texts claim.⁴⁴ In fact, “the myth of the desert is one of the most abiding creations of late antiquity”, Peter Brown argues, because by delimiting “the world” from which the Christian must be set free to a clear “ecological frontier”, the myth identifies the disengagement from it as a physical move from one zone to another.⁴⁵

Initially, Christian asceticism seems to have been practised within the urban congregations. Various factors, however, made abstemiously minded people – men and women alike – abandon their cities, towns, and villages for a life in the wild, in hermitages and monasteries. In Syria, those who withdrew from society for a life in solitude played an important role for the benefit of the peasantry. Also, proximity to population centres remained vital for sustaining life in the wild. In Egypt, more than elsewhere, the boundary between the desert and the farmed land became equal to that between a God-pleasing life and a life in “the world”.

The anarchic trait of asceticism

Christians in general had little positive experience of worldly authorities: the political and cultural values of the Greek city state were alien to them. When the bishops in the fourth century assumed official positions alongside the civil governors, and thus came to uphold cultural traditions and even exercise judicial functions, this contributed to a mental dissociation from the diocesan city as the proper place to live in. Many Christians began to cherish an ascetic ideal and yearn to retire from public life and practise austerity and self-discipline in seclusion. This development was equally disliked by worldly and ecclesiastic authorities: The state deemed those who retired as “devotees of idleness”, who under the pretext of religion escaped public duties; the church disapproved of their interference with pastoral cure, and urged their expulsion from the cities to desert places.⁴⁶

Of whatever kind, the anarchic trait of radical asceticism in Late Antiquity is very marked in its demand for permanent continence: Christians should not only seek salvation dissociated from society – society itself was not thought worthy of being upheld by procreation. Certainly, high ideals, even those *en vogue*, far from

43 See Brown 1989, 217.

44 See Clark 1999, 37.

45 See Brown 1989, 216, 254, 257.

46 See the discussion in Clark 1999, 24f. and the literature adduced there. Later on, the Nestorian church council of Seleucia-Ktesiphon (486) forbade monks to interfere with the ministry of the church and decreed that monastic life should be secluded. See S. Gero 1979, esp. the reference to *Synodicon Orientale ou recueil des synodes nestorien*, transl. by J.B. Chabot, Paris 1902, 302f..

always play a prominent part in actual social life; and one might suspect that women of those days, in order to provide for their future, were anxious to bear many children so as to ensure the survival of a few. But in actuality, sexual continence, as propagated in Asia Minor and Syria, *did* have an effect on society. From a study of fourth-century funeral inscriptions along with literary evidence, Evelyn Patlagean arrives at the conclusion that the idea of sexual continence clearly influenced everyday life: the attitude towards offspring was restrictive; people simply did not want a large family. “The praise of large families as such is not to be found, neither in sermons, nor in the commemorative words of the grave inscriptions.”⁴⁷

Vera von Falkenhausen has pointed to the “anarchic streak” of asceticism: “seeking to escape the city and civilization, refined cooking and classical education, and the government or ecclesiastical authority, monks headed to the desert, into trackless mountains, or even high up onto free-standing columns”.⁴⁸ The early ascetics often lived in the open where they were exposed to the elements and survived by consuming edible plants and wild fruits. They sought a life untouched by the appurtenances of civilisation, as they returned, as it were, to the status of primeval man in Paradise, accompanied by angels. They regarded life on earth as a mere training ground in which to prepare for an angelic life in heaven. Those who chose a life in solitude and permanent continence were named *īḥidāyē* “solitaries” in Syriac and *monachoi* “monks” in Greek – a concept that not only denoted their solitary life but also their refusal to dissipate their energies by vain pursuit; they were, so to speak, whole-cast in their struggle.⁴⁹

In the early Byzantine period, many ascetically minded Christians above all in Asia Minor and Syria did not feel at home in society; they found little comfort in its continued existence. They shunned their urban milieu for a life untouched by civilisation and opted for a life in the wild, and they regarded life on earth as a mere training ground for eternity. The worldly authorities could hardly do anything about a general unwillingness to contribute to procreation, but banned avoidance of civic duties.

Ecclesiastic response

The breakdown of Roman civil society in the wake of the crises of the third century called for the church to show civic patriotism and engage in municipal councils and commercial matters, not least concerning relief to the poor. Many church leaders accepted their responsibility and got involved. For those who were involved, the anarchic aspect of asceticism – withdrawal from authorities, disapproval of social institutions and common values – appeared troublesome and called for a response.

From the beginning, the monastic movement in Egypt did not seek publicity, but the great interest in it created an enormously popular genre of literature that may be labelled “sketches of monastic life”, such as Athanasius’ *Life of Anthony*, Palladius’ *The Lausiac History* and the anonymous *Sayings of the Desert Fathers*. However, the reason for Athanasius of Alexandria (c. 293–373) to get in contact

47 Patlagean 1990, 294.

48 von Falkenhausen 1997, 193.

49 See Brock 1984; cf. Vööbus 1958, vol. 2, 256–291 and Guillaumont 1977, 13.

with the Desert Fathers was, according to Susanna Elm, to strengthen orthodoxy against the Arians. “What was the audience of these works”, she asks and answers: “Not the Egyptian Desert Fathers, but an educated urban readership, among them ascetics. Thus, the transfer worked both ways. Athanasius used his interpretation of the ‘rural’ Egyptian asceticism to control and organize inner-urban asceticism, and it was his modified form of pseudo-‘rural’ ascetic life, created in response to urban requirements, that was then exported to the West”.⁵⁰

At first, Basil the Great, bishop of Caesarea in Cappadocia (330–379), was impressed by the way of life in ascetic communities, such as the one founded by a certain Eustathius in Pontus close to the Black Sea; but soon he took a strict position against them. His main objection to hermits was that they neglected love for one’s neighbour (Matt 22:39).⁵¹ As one of thirteen bishops who assembled at the Council of Gangra (c. 350) in northern Asia Minor, he took exception to those ascetics who called for a ban on matrimony and those who claimed that women were in their right to leave their homes for a hermit’s life, or otherwise try to make themselves look manly in dress and hair style.⁵² As bishop, Basil himself continued to lead a life of self-discipline and eventually succeeded in bringing the organized church and monasticism together. One problem was that asceticism harboured a good many heterodox ideas, and another that the monks were unable to contribute to the welfare of society; having renounced all possessions and social attachments, the monks themselves were in need of charity.⁵³ Basil, therefore, endeavoured to reform the idea of monasticism. Firstly, he demanded that convents be established close to cities, if at all possible, so as to facilitate supervision by the local bishop; secondly, he declared that the task of the monks should be to serve God and fellow beings and not to lead a vagabond life in mortification. Charity towards the poor could very well be combined with more urban monasteries that remained under ecclesiastic control. Right outside Caesarea, Basil, accordingly, built a large complex including a hospice for the benefit of the poor. His rules for the daily life of the brotherhood in charge of the complex have had a great impact on subsequent monastic life – not least in Palestine – in being more moderate in practices than was customary.⁵⁴

Church leaders, such as Clement of Alexandria, were men of extensive reading, eager to study Greek philosophy, although they regarded it as a pale copy of the original divine revelation found in the Bible. Nevertheless, they adjusted to and even integrated ideas that were prevalent in society.⁵⁵ The concept of monasticism spread rapidly all over the Christian world and became the ideal of a Christian lifestyle. A strong anarchic trait among those who practised it called for an ecclesiastic response. Monasticism was turned into a more purified form in which the monks were thought to have received a separate vocation apart from the laity.⁵⁶ In the end, monasteries were fully accepted as a part of the urban environment.

⁵⁰ Elm 1994, 371.

⁵¹ Basilus 929.

⁵² For a convenient collection of documents in translation with introduction, see Merkt 2008, 89–96.

⁵³ Patlagean 1997, 20.

⁵⁴ Cf. Gribomont 1993, 219f. and Holmquist 1928, 38–42.

⁵⁵ Cf. Edsman 1986–88.

⁵⁶ Basil himself did not regard monasticism as a special and higher form of Christianity; see Fedwick 1993, Epistle 150, 20.

Asceticism and the graeco-roman world

In Syria, asceticism was maintained among the laity, as was the appreciation of holy men.⁵⁷ An example of this is the monk Severus, who belonged to the movement that affirmed that there is only one nature in the person of Christ, was appointed patriarch of Antioch in 512. This man was tough in his refusal of the refined urbane life. As soon as he arrived at his Episcopal residence, he destroyed its bath, dismissed the kitchen servants and the cooks, and removed all their equipment, just as the God-loving kings Hezekiah and Josiah had done to the statues of Baal. He continued to practise the austere customs of monasticism: he lived by vegetables and ate bread of the poorest quality – and following the code of ascetic manners he also refrained from washing. Whatever one may think of Severus and his habits, in men like him the church received workers of spiritual strength and conviction, men who took a firm stand against laxity and dishonesty.⁵⁸

The world of the Bible interacted with the environment of Late Antiquity. During the reign of Justinian, 527–565, mosaic art was greatly favoured and skilled artists were engaged to decorate churches and monasteries. Only the floor mosaics depicting what is on earth are preserved of the ruined buildings; the celestial world once depicted on the walls is missing. A large number of ruined churches are found in today's Jordan. Those who defrayed the expenses of mosaic art in parish churches in the city of Kastron Mefaa (today's Umm ar-Rasas, south-east of Madaba) were likely well-to-do urban minded parishioners. Accordingly, the upper mosaic pavement in the nave of the Church of St. Stephan⁵⁹ depicts the cities of the day in the Holy Land: Jerusalem, followed by Nablus, Sebaste, Caesarea, Diospolis, Eleutheropolis, Ascalon and Gaza; and Kastron Mefaa followed by Philadelphia, Madaba, Esbounta, Belemounta, Areopolis and Chrach Mouba. Most of these cities could boast of being old bishoprics and among the first to accept Christianity.⁶⁰ Obviously, the parishioners in Petra were likewise fond of art and refined taste: the floors in the newly excavated sixth-century Petra Church were decorated with classical-style secular motifs such as animals, flowers and personifications of the sea, the earth and the seasons. While Byzantine women in public life concealed virtually all of the body except the hands,⁶¹ a young woman in a medallion in Petra Church is wearing earrings and an elegant hat; her right breast is bare, and she holds a bunch of twigs in her left hand and a sickle in her right.⁶²

The Palestine of the sixth century exhibits totally different cultural and religious settings. In the Judean desert, monks struggled on with their daily routine in privation, while in the coastal cities of Caesarea, Joppa, Ascalon and Gaza the pagan Hellenistic culture still flourished and deeply influenced men of the church. Especially Gaza had little concern with the development that made Palestine the Holy Land. In the first half of the sixth century, the prolific writers of the Gaza school, Procopius and his pupil Choricius, actually allowed Christian and pagan ideas to become so inextricably intertwined that some scholars have

57 Brock & Ashbrook 1987, 10.

58 From Witakowski 1996, 14f. and Vööbus 1958, 330.

59 Apparently dating as late as to AD 718, cf. Piccirillo 1987.

60 See further Piccirillo & Alliata 1994.

61 See Talbot 1997, 127.

62 See Fiemo *et al.* 2001, 255.

doubted their Christian faith. In one writing Choricus even defends mime, a burlesque form of Roman comedy, full of coarse jokes and of bad reputation. He argues that the immorality exhibited in such plays is only an imitation of reality and cannot do any harm to the actors and actresses or their audience.⁶³ His world was seemingly far from that of John Chrysostom, who strongly censured all urban amusements. Yet the latter cared for vulnerable individuals and their privacy – even the privacy of stage girls, who, acting the part of nymphs, splashed around naked in Antioch’s newly built water theatre. The girls’ status as shameless (*átimoi*) deprived them of any empathy from their fashionable – even Christian – male and female spectators. John protested: “Don’t say that she that is stripped is a harlot; for the nature is the same and bodies are alike.”⁶⁴

The desert, a city

All the magnificent churches, built by the order of the emperors, helped Jerusalem regain its status as the elect city of God, the Holy city, and the centre of the world.⁶⁵ This prospect contributed to the great number of monasteries that were built in its vicinity. In the heyday of monasticism, in the Judean desert, c. 450–550, the monasteries were as many as seventy in an area as small as 90 x 25 kilometres.⁶⁶ Often located at pilgrimages sites, the Judean desert monasteries were inhabited by people from all over the Christian world. They housed on average between two and three hundred monks. Many were of the *laura* type, which means that the monks did not live together but met on a daily basis in common buildings. Also, the numerous hermitages were mostly tied to a mother monastery: wandering ascetics without roof and walls were strongly censured by the church as well as by the state.⁶⁷

Ascetic life underwent a change from the early fourth to the mid-sixth century. The simple hermitage inhabited by a plaiting or weaving anchorite, who sold the products in nearby villages, was replaced by large and developed monasteries that produced most of their supplies and bought or were granted the rest. Already in the late fourth century, monasteries began to acquire land; but donations and traditional basketry, and perhaps some seasonal income from harvest labour, were still sufficient to cover most of the expenses for living and charity. Subsequently, the agricultural activity increased: either the monks cultivated the fields themselves or leased them. To a great extent the monasteries were self-supporting: gardens and fields produced wine, olive oil, fruit and vegetables (grain was imported from Transjordan).⁶⁸

The Judean desert monasteries – as well as those in Egypt – constituted a kind of “extended city”, especially as a network of natural and built paths knit them together. The large number of monasteries in such a confined area, and the fact that they stood in close contact with each other, renders the expression “the desert,

63 Downey 1958 and Westberg 2010, 125–132.

64 See Brown 1989, 216.

65 See e.g., Paczkowski 2001.

66 The architecture, daily life and livelihood of the various types of monasteries are treated by Hirschfeld 1992.

67 See Hirschfeld 1992, 213–222.

68 See Hirschfeld 1992, 82–91, 200–204; and Heiska 2003, 87–93.

a city” all the more apt.⁶⁹ Admittedly the monks continued in austerity and self-discipline, but the monasteries came to comply with the broad criterion of what constitutes a city: namely, a permanent settlement whose inhabitants do not only live by agriculture and therefore have to co-operate so as to provide themselves with necessary provisions. What began as a counter-urban movement, whose aims were to promote absolute solitude in severe austerity, had now become a well-organized desert society consisting of a great many small urban centres – the wheel had come full circle.

The maintenance of the monasteries was susceptible to disturbances in the society outside the walled enclosures, such as a decline in the birth rate, plague, war and foreign rule. The decline in population was detrimental to their resilience in consequence of monasticism itself and the great plague of 542–544. The Persian occupation 614–628 was a heavy blow to monastic life in Palestine, as was, of course, the subsequent Islamic rule which alienated the Holy Land from the Christian world and decreased the number of pilgrims.

Conclusion

From the outset, Christianity was disseminated among middle class citizens in cities. Early tracts admonish the Christian town-dwellers to be faithful, modest and decent and not indulge in the pagan way of life; but they are not taught to observe any special habits specific to believers, nor are they admonished to shun urban environments. Probably, a heartfelt insufficiency, kindled by those passages of the Bible that presuppose an abstemious lifestyle, interacted with contemporaneous negative attitudes to social urban life and thus promoted Christian asceticism. The orthodox Fathers took exception to erroneous reasons for asceticism but encouraged people to practise it for their spiritual development.

It seems that ascetics initially stayed in their urban environment, but subsequently were expected to flee towns and villages. Nevertheless, proximity to population centres remained vital for the sustenance of anchorites in their hermitages and monks in their monasteries. After the originally free and anarchic asceticism had been castigated, monasticism was fully accepted and encouraged in the vicinity of population centres. Although the ideal of a life in severe austerity, continence and retirement from “the world” was widespread and practised by many leaders of the church, the refined Hellenistic urban culture still exercised a deep influence.

The desert monasteries constituted a kind of “extended city”. Although the monks continued in self-discipline, the monasteries complied with the broad criterion of what constitutes a city. What had begun as a counter-urban movement had now become a well-organized desert society consisting of a great many small urban centres. The maintenance of this “extended city” was susceptible to disturbances in society; detrimental to its resilience was the decline in population and the Islamic rule, which alienated the Orient from the Christian world.

69 See Hirschfeld 1992, 205–212.

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13. Constantinople in the Transition from Late Antiquity to the Middle Ages

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ABSTRACT

This chapter gives an overview of the transformations which took place in Constantinople from the time of its foundation in the early 4th century as a Late Antique metropolis and a magnificent seat of the emperors, to the end of the 7th century when it was changed to a medieval town, perhaps less splendid in some respects but well adapted to new geopolitical and economic circumstances and still the centre of imperial power. In order to present this complicated process, attention has been given to different aspects of the city's development: organization; use and design of the urban space, both public and private; the elaborate infrastructure, primarily in regard to sustenance and water supply and their sensitivity to climatic changes; the connections to the hinterland; the growing need of improved defence; and last but not least the social and spiritual life of the inhabitants.

The picture emerging from such an approach shows that alongside political and economic transformations the crucial factor responsible for a shift in the general pattern of Constantinople's urban life was the advancement of Christianity. The new religion not only gradually dislodged old beliefs and customs but also changed people's mentality, making it difficult for them to understand and appreciate the Classical heritage. It is symptomatic that Constantinople, which was founded with the idea of making it the New Rome, appears at the threshold of the Middle Ages as the New Jerusalem.

Introduction¹

The city of Constantinople, with its continuous history stretching forward to the present time, is without doubt one of the most successful urban achievements in

1 The following works have been consulted during the writing of this chapter but are not directly referred to: Ahrweiler 1966; Bauer 2001; Charanis 1972; Cameron 1974; Dagron 1970, 1984, 1989, 1995; Downey 1950; Ebersolt 1951; Foss & Winfield 1986; Evans & Wixom 1997; Guillard 1967, 1969; Haldon 1990; Hatlie 2007; Jacoby 1961; Janin 1953, 1964; Kaplan 1992; Kazhdan & Constable 1982; Kazhdan *et al* 1991; Koder 1995; Magdalino 1996; Mango 1959, 1981, 1995; Mango & Ševčenko 1961; Mango & Dagron



Plate 1. Panorama of Constantinople: view from Galata towards the old city. Courtesy of Maja Kominko.

world history. For nearly two millennia it has not only survived but also held a firm position as the largest city in Europe.² To better understand how Constantinople could effectively function and successfully evolve for such a long time, we may start by examining the period that witnessed the transition from a Late Antique Roman city to the Byzantine medieval urban agglomeration of the eighth century.

Founded around 324³ as the capital of the East Roman Empire, Constantinople witnessed periods of amazing splendour in its first seven centuries, but also dramatic falls. As a result of such changes in prosperity, the city underwent profound transformations not only in terms of territorial extent, size of population, economic power and administrative machinery, but also in terms of a fundamental metamorphosis of people's mentality. Therefore, it would be interesting to determine what particular characteristics distinguished Late Antique Constantinople of from its medieval successor. What lay behind these differences; why and when did the changes occur, in what form, and what results they generated?

Documentation of the transformation process on the basis of written records and archaeological studies raises difficulties, and thus it is not surprising to find widely diverging views about the nature of this process and the consequences it engendered. Historians consulting the literary material deal on the one hand with laconic reports deprived of any personal observations, such as the universal *Chronicon Paschale*⁴ covering the period up to 672, and on the other hand with accounts full of rhetorical exaggerations and erudite clichés, as in the *De aedificiis*, the description of Justinian's building activities written by his historian, Procopius.⁵ Moreover, for the period of the late seventh and eighth centuries the material is notoriously poor. In addition, very little data provided by the texts can be used for statistical purposes. An exception may be the *Notitia urbis Constantinopolitanae*, an anonymous regional catalogue compiled in Latin between 425 and 430, which describes fourteen regions of the city and points out the most notable buildings, offices and public spaces.⁶ A similar work, partly based on the

1995; Maraval 1985; Mathews 1971; Miranda 1976; Müller-Wiener 1977; Patlagean 1977; Stathakopoulos 2004; Teall 1959; Volbach 1973; von Milligen 1899.

² Almost 13 million inhabitants.

³ Inaugurated on 11 May, 330.

⁴ *Chronicon Paschale*.

⁵ Procopius, *De aedificiis*.

⁶ *Notitia*. *Notitia* was the primary source used to estimate the fifth-century population of Constantinople and the architectural design of the city.

Notitia, was known as the *Patria of Constantinople* or *Scriptores originum Constantinopolitanarum*, compiled about 995.⁷

The so-called *Book of Eparch*⁸ forms a valuable source of information about the administration of the city and the responsibilities of capital's prefect, while the city's relation to the hinterland is reflected in the text known as the *Farmer's Law*.⁹

An interesting panorama of medieval attitudes to Constantinople's pagan past is found in the anonymous eighth-century work, *Parastaseis syntomoi chronikai*, or "Brief Historical Notes", which deals with the monuments of the city and may be treated as a kind of catalogue of its antiquities.¹⁰

Some realistic pictures of life in Constantinople can be found in the lives of the saints connected to the city, the most important of which is the collection of miracles of Saint Artemios, an Egyptian martyr enshrined in, among other places, Constantinople.¹¹ Written in the second half of the seventh century, but based on older material, the work provides a detailed account of the everyday life of the city in the sixth and seventh centuries. Also very useful in this respect is the *Life of Andrew the Fool*, most probably written in the 9th or 10th century.¹²

Generally speaking, the archaeological evidence concerning Constantinople, and in particular the documentation of the fourth through eighth centuries, is not in abundance either. The little that was left of the antique city has been absorbed into the modern fabric of Istanbul. Although many excavations have been conducted, relatively few have been carried out in a sufficiently methodical manner to determine a satisfactory chronology of the city's development. The superimposition of the modern capital has greatly hampered a more advanced investigation of important sites within the ancient part of the city.¹³

New Rome

The Constantinian city: organization of the public space

One of the undisputable factors in the successful history of Constantinople is its particularly favourable location: a triangular peninsula protected by the waters joining the Mediterranean and Black Seas and separating the continents of Europe and Asia. It provided excellent natural facilities for defence against military attacks and for the transportation of goods and people. Although the history of the site previously known as Byzantium went back to the seventh century BC, it did not develop into an important city until it was promoted to the position of New Rome.¹⁴

As a result of this decision, the old city was extended, rebuilt and populated with new inhabitants who migrated there from areas throughout the empire, at-

7 *Scriptores originum Constantinopolitanarum*.

8 *Book of the Eparch*.

9 *Farmer's Law*.

10 *Parastaseis syntomoi chronikai*.

11 *The Miracles of St. Artemios*.

12 Leontios of Neapolis, *Life of St. Symeon the Fool*.

13 Mango 1993, 132f.

14 The town was one of the places rebuilt and fortified by Septimus Severus (193–211), who transformed it into a typical Roman city, just as he did with several other places.

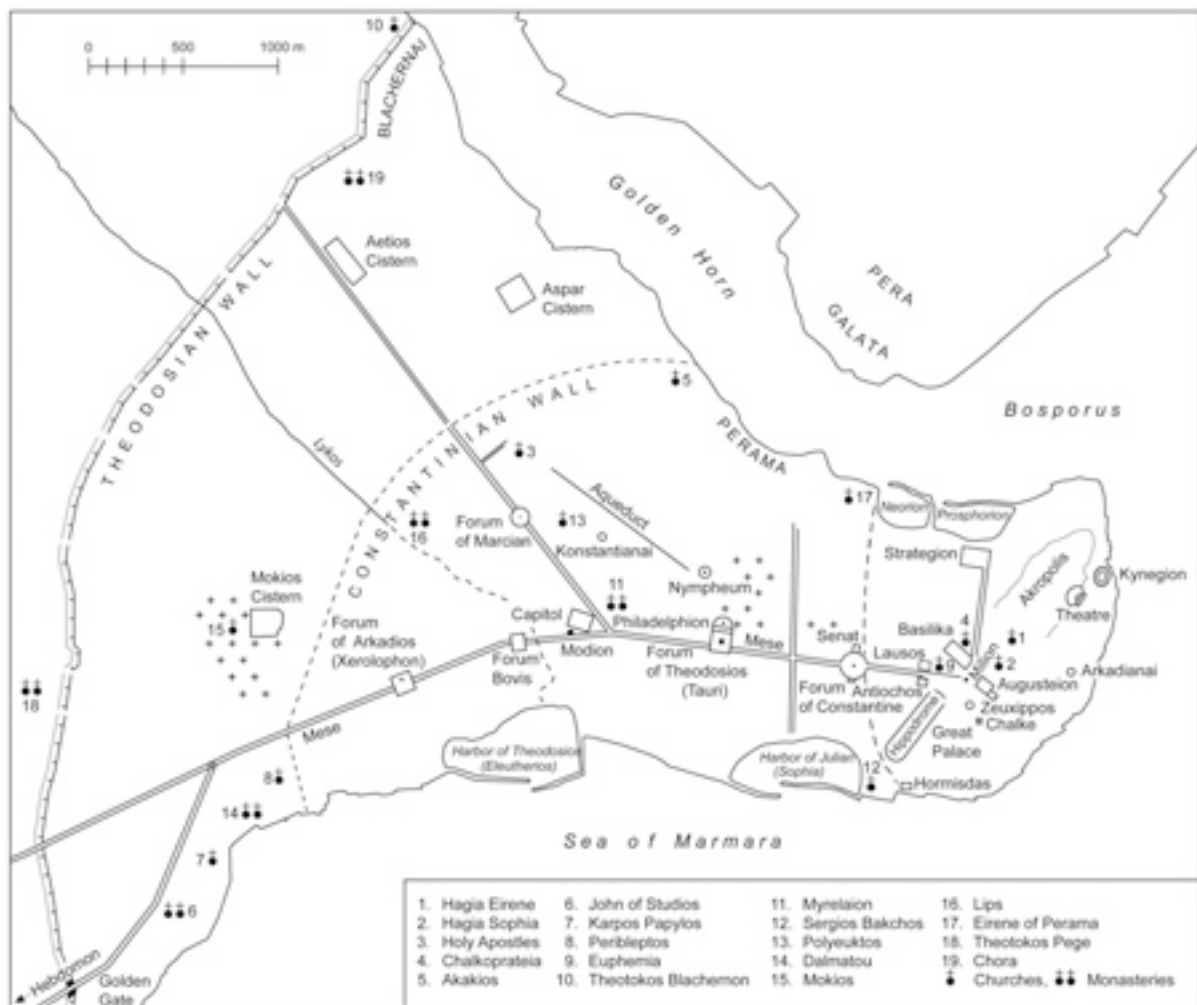


Fig. 1. Map of Constantinople. Drawing by Alicja Grenberger.

tracted by the free distribution of bread, the prospects of employment, and the proximity to the imperial court. Their numbers increased from about 2000 to 350000, as noted at the end of the reign of Emperor Constantine in 337.¹⁵

The area of the Constantinian city was enlarged to about seven hundred hectares and enclosed on the landward side by a fortified wall that was three kilometres long.¹⁶ Two harbours, the Neorion and the Posphorion, with a joint shoreline of about 1500 metres, as well as the sea walls along the Bosphorus inlet known as the Golden Horn and the Sea of Marmara (Propontis), were also fortified.

The plan of the city was not unique but followed the standard applied in most towns during the time period. The streets were laid in a regular pattern with two broad main avenues, the *emboloi*, bordered by colonnades and meeting at right angles. The streets were punctuated with public places, commemorative arches, tetrastylons, squares and communal buildings, all connected to each other by a complex system of annexes and colonnaded passages which also sheltered the shops.

15 *Notitia* states 4388 houses; it is estimated that at this time 50 people were living in one house. For further discussion on this issue and on the population of Constantinople in general, see Dagron 1974, 518–54, esp. 525ff.

16 In comparison to the old town, the urban territory of the Constantinian city was almost quadrupled.



Plate 2. (A) Ruins of the south-eastern part of Hippodrome (sphendone). Photo by the author. (B) Computer reconstruction of the sphendone (after *Walking thru Byzantium*). (C) Imitation of the Quadriga on the top of the Brandenburg Gate in Berlin; courtesy of Weronika Witakowska.

The whole civic sector was concentrated in the eastern part of the city. The most imposing establishment was the approximately 400-metre-long hippodrome for chariot racing, with a capacity of about thirty thousand spectators (Plate 2A, B, C).¹⁷ Its north side was closed by the *carceres* which had starting gates for the chariots and whose main entrance was decorated with the brazen statue known as the *Quadriga*.¹⁸ The imperial palace (the Great Palace)¹⁹ neighboured the Hippodrome and its residential wing, called Daphne, was connected by a staircase to the *khatisma*, the imperial box from which the emperor followed the races and from where he appeared to the people on important ceremonial occasions such as proclamations and triumphs. Owing to these multiple functions, the Hippodrome served as the focus of Constantinople's public life.

Also neighbouring the Great Palace was the main city bath-gymnasium of Zeuxippos,²⁰ and close by was the large courtyard of the Tribunal, the place designated for diverse ceremonial and public functions.²¹ In the same vicinity lay the principal forum of Augusteion²² with the reception buildings of the Consistorium, the Senate House²³, and the complex known as the Basilica. The latter was equipped with an underground cistern and accommodated several institutions including a public library, a university and a law court.

17 The complex followed the standard design of this kind of establishment, which ultimately originated from that of Circus Maximus in Rome.

18 The horses belonging to this statue were taken to Venice in 1204 and placed above the main entrance to San Marco.

19 The exact form of Constantine's palace is not known but likely it had some features in common with the palace of Diocletian at Split.

20 Begun by Septimius Severus and still unfinished at the time of his death. It was finished by Constantine and at the same occasion ornamented with polychrome marbles and sculptures.

21 For acclamation of a new caesar, a new empress and the receptions for the representatives of the Hippodrome factions.

22 Remodeled from the ancient forum called Tetrastoon and renamed in honor of Constantine's mother, the Augusta Helena. A silver statue of her adorned the place.

23 The doomed structure remained a miniature version of the Roman Pantheon.

Plate 3. (A) Remnants of Milion. Photo by the author. (B) Computer reconstruction of Milion (after *Walking thru Byzantium*).



The Basilica complex also included two temples erected by Constantine and dedicated to pagan divinities, one to Rhea-Kybele and the other to Tyche-Fortuna. The main religious centre with the temples of Apollo, Aphrodite, Poseidon and Athena, however, occupied the Akropolis situated near the eastern sea wall. At its foot stood a theatre and the Kynegion, where the public was entertained by the fights of gladiators and wild animals.

The east-west oriented avenue, the Mese, Constantinople's ceremonial road, began in front of the Chalke, the palace's vestibule. It led westward from the tetrapylon called Milion (*Plate 3A, B*) to the Forum of Constantine, an oval area decorated by porticos and accentuated by a centrally placed porphyry pillar topped by a statue of Constantine represented as Apollo-Helios. According to a legend, it contained a powerful relic - a piece of the True Cross brought from the Holy Land by the emperor's mother Helena.²⁴ (*Plate 4A, B*) The avenue continued to the square of Philadelphion, probably situated east of the point where



Plate 4. (A) Column of Constantine. Photo by the author. (B) Computer reconstruction of Constantine's forum (after *Walking thru Byzantium*).

²⁴ The legend was first recorded by Sokrates Scholasticus, (+434), see *Historia Ecclesiastica*.

the Mese divided into two branches.²⁵ Between them stood the Capitol, a temple dedicated to the triad of the Roman state gods Jupiter, Juno and Minerva. The place where the Mese bifurcated was marked by a small piazza adorned by the statues of Constantine's sons set on two porphyry columns.²⁶

The main branch of the Mese, which continued south-west, ended at the city wall with the Golden Gate formed as a triumphal arch.²⁷ The street running north from the Milion led to the ground for military exercises, known as the Strategion, which was situated close to the harbours. The north-west part of the city was mostly occupied by private residences. The pre-Constantinian cemetery was moved outside the new wall in accordance with a pagan custom that forbade burials within the city.

The architecture of this public sector, which was intended to imitate the monuments of Rome, was oversized and pompous, created with the aim of impressing the masses. The buildings, covered with polished, coloured marble plates, were decorated with gilded ornaments, mosaics and paintings. Everywhere stood the sculptures and honorific statues, many of them ancient and brought from the cities of the eastern provinces.²⁸ They represented the Greco-Roman gods, mythological heroes, important officials, famous public figures and benefactors of the city. The baths of Zeuxippos alone housed hundreds of sculptures.²⁹ Several statues were also placed on the wall, the so-called *spina*, which stood in the centre of the Hippodrome. There they shared space with the obelisks, columns and fountains.³⁰

Despite Christianity becoming the official religion of the empire, very few churches were founded in Constantinople during Constantine's reign. These churches include the basilica-complex of the original *Megale Ekklesia* (the Great Church) later called Hagia Sophia, Hagia Eirene which was connected with the residence of the bishop,³¹ the martyrium of Saint Akakios at the Heptascalon near the Golden Horn and the shrine of Saint Mokios in the cemetery outside the city wall. The imperial mausoleum of the Holy Apostles, where Constantine and his successors were buried, was built after the emperor's death in the north-west part of the city.³² Outside of the centre, in Hestiai on the European side of the Bosphorus, was the shrine dedicated to the archangel Michael, which was built according to tradition by Constantine on the ruins of a pagan temple. The church was the first shrine where the pagan practices of incubation for the purpose of healing were adopted by the Christians.

Notwithstanding the important role Constantine played in establishing monasticism in the empire, it is unlikely that he initiated any monastic foundations in

25 The location of this place is not entirely clear; the name Philadelphion connected with this place appeared first in the eighth century.

26 The so-called Tetrarch group, now in the treasury of San Marco, Venice.

27 It should be distinguished from the Golden Gate of the Theodosian wall.

28 For a detailed study of the subject (with the catalogue), see Basset 2004.

29 Basset 2004, 160–185.

30 See the computer reconstruction in *Walking thru Byzantium* 24f, 32f and the objects 38f.

31 Enlarged from a smaller foundation of a *domus ecclesiae* and consecrated in 337, the church most probably served as the first city's cathedral; *Chronicon Paschale* I, 544; Mango 1972, 26.

32 It was a central, domed structure with radiantly placed niches, to house the sarcophagi. The location of the mausoleum inside the town was an exception from the rule forbidding burials within the city walls; see Procopius, *De aedificis* I, IV, 9 ff.; Mango 1972, 102f.

his new capital. The atmosphere of the expanding city with its busy life, full of commutations, was not an appealing milieu for those who looked for isolation and peace. A monastic movement initiated in Constantinople in the middle of the 4th century by a certain Makedonios had, it seems, a mere ephemeral existence.

Water and food

The infrastructure of the city was improved by the constructions of the water system, granaries, mills and bakeries, all administrated by the state.

Constantinople was poorly provided with natural sources of water. What was available came from the small stream Lycos which emptied into the Propontis, and two springs which flowed near Blachernai area and the Church of Peribleptos. Together with rainwater collected in open cisterns it apparently satisfied the modest need for drinking water, but was insufficient to cover the consumption connected to the baths, washing and other hygienic functions. The demand for bath water in particular must have been considerable, since in Constantinople, as in any Roman town, bathing was a necessary part of everyday life. The aqueduct, built by Hadrian (117–138), drew water from the Halkali region some fifteen kilometres west of the city.³³ For the most part it supplied the palace and the oldest bath of the city, that of Achilles, which was supposedly founded by Byzas of Megara, the legendary founder of the town of Byzantion. The Konstantianai baths, commissioned by Constantios II and begun in 345, were in use first some seventy years later. It seems that the water problem was never resolved by Constantine and his immediate successors. The notes about Constantinople dying of thirst recur in the contemporaneous sources.

Sustenance was less problematic. In its position as the most important urban centre of the empire, Constantinople, like Rome before it, was subject to special conditions of food supply: the provisioning of the city was to a large extent nationalized. Although Thrace, the coastal plains to the west of the Black Sea, and the regions around the Sea of Marmara were grain production areas, most cereals reached Constantinople from Egypt.³⁴ (Plate 5)

Transported by sea in special boats,³⁵ which had an average capacity of 10000 *modi*,³⁶ the grain was stored in the state magazine situated close to the Prosphorion harbour. Unlike meat and vegetables which were put on the free market, grain was not subject to price speculation. The annual supply was only partly distributed to the state mills and bakeries,³⁷ the rest being collected in granaries to prevent any subsistence crises caused, for instance, by differences in the annual Egyptian harvest.

The free distribution of bread in Constantinople was established by Constantine the Great. Unlike Rome, in Constantinople the allotment of basic food products was not meant to alleviate poverty, but rather to make the city attractive to newcomers, stimulate its development, and create an urban society which could correspond to the emperor's ambition to create a New Rome. During Constantine's

33 The capacity of the aqueduct was calculated to 6000 m³ water per day.

34 About three fourths of the whole supply for Constantinople was sent from Egypt.

35 The capacity of an average boat built for grain transport (with width rounded carcass) was between 40 and 50 tons. With the raising price of slaves the boats gradually developed from rowing vessels to sailing ships.

36 In the fourth century one *modios* was about 30 litres.

37 The *Notitia* makes reference to 114 bakeries of which 20 were public.



Plate 5. Byzantine fleet; Miniature in Chronicle of Skylitzes, 12th century; Madrid, Biblioteca Nacional, Codex Vitr. 26-2; courtesy of Biblioteca Nacional.

reign some 80000 rations of bread were distributed daily, which was more than what was actually needed if one takes into consideration the city's population at the time.³⁸ Even rich citizens and their households could share the benefits.

Social life

Like in all antique cities, social life in Constantine's capital was concentrated to public space. Among these, the bath and *thermae* held an important role. Besides their obvious hygienic functions, these establishments were used for relaxation and any kind of social interaction, from business and private meetings to showing off one's wealth and attending various performances. The visit to the baths was treated as a social obligation and it was not unusual that some citizens attended the public *thermae* once or even twice a day. The large scale of these buildings along with their particular design and decoration was aimed to satisfy all such needs and demands. In addition, the citizens of Constantinople had the opportunity to cultivate the ideal of physical fitness in several *stadia* and *gymnasia*.

As entertainment, animal baiting took place in the amphitheatre. Particularly popular were also the performances of mime and pantomime. Most highly frequented, however, was the chariot racing at the Hippodrome, a complicated and expensive form of entertainment. Moreover, it generated a number of social and political problems connected to the competition between supporters of four factions – red, white, green and blue. The emperors also had an interest in the games and favoured one of them. It was estimated that some fifty races took place every day. The champion charioteers who won many victories were deeply admired and enjoyed an immense popularity. Some of them were acknowledged in the epigrams and commemorated with statues.³⁹ (Plate 6)

38 According to the general calculations it was about 0.3 kg bread per person. For different calculations concerning grain, wheat and bread pieces see Durliat 1990, 61–64.

39 One of them was Porphyrios; his statue with an epigram is kept in the Archeological Museum in Istanbul; Cameron 1973; see also Mango 1972, 49f.

Plate 6. Scenes from the Hippodrome; ivory diptych, 4th century, Brescia, Museo Cristiano (after Volbach).



Time of prosperity

Growth of the city

The policy of Constantine to make the capital an attractive place to live in seems to have achieved its desired effect, because the population of Constantinople increased to 300000 inhabitants after his immediate successors, reaching its apogee in the middle of the 5th century with about 400000.⁴⁰ The municipal space had grown to about 1400 hectares. (*Plate 7A, B*)

The problem of water supply was solved by the restoration and enlargement of the old aqueduct. This enterprise, which was sponsored by the emperor Valens and directed by the architect Elphidios from Antioch, began in 373 and took over twenty years to complete. Initially, the water was drawn from the Belgrade Forest some twenty kilometres north-west of the city. The aqueduct provided 12000 m³ per day. Subsequently, it was extended 120 kilometres, reaching the Thracian border. The network was completed by cisterns which served as water reserves in case the aqueducts were cut off.⁴¹ The oldest, the cistern of Modestos (154 x 90 m), was built between 363 and 369 near the church of the Holy Apostles. The others, those of Aetios and Aspar, were constructed between 421 and 459. The cistern of Mokios, ascribed to Anastasios I, (491–518) held a million m³ of water,



Plate 7. (A) Aqueduct. Photo by the author. (B) Stone water pipes on display at the Archaeological Museum in Istanbul. Photo by the author.

⁴⁰ The difficulties in estimating Constantinople's population reflect different opinions concerning the maximum population figure, which ranges from 250000 to one million. I accept the figures given by Mango 1990, 51; Durlat 1995, 21f. gives 400000–600000.

⁴¹ It happened in the year 478 when the king of the Ostrogoths, Theodoric the Great, seized Constantinople.



Plate 8 Cistern of Aethios today; courtesy of Maja Kominko.

a capacity which Constantinople never exceeded. All three were situated outside the Constantinian wall. (*Plate 8*)

It is a generally accepted that the four-kilometre-long circuit of walls running 1.5 km west of the old fortifications, built between 412 and 414 by Theodosios II, was not motivated by a need for additional space for the growing population, but by the practical necessity of protecting new cisterns from the barbarians (*Plate 9A*). The new walls, which also ran along the shores of the Golden Horn and the



Plate 9. (A) City walls. Photo by the author. (B) The Golden Gate. Photo by the author.

Plate 10. (A) Arch of Theodosios; reconstruction by R. Nauman (after Müller-Wiener). (B) Fragment of Theodosios' triumphal arch (a column). Photo by the author. (C) Fragment of Theodosios' triumphal arch (a pilaster). Photo by the author.



Propontis, represent a remarkably advanced example of military architecture.⁴² At the Marmara end, the wall circuit was broken by the Golden Gate, the ceremonial entryway to the city in the form of arcaded pylons.

The area between the Constantinian and Theodosian walls was never really considered urban. It remained sparsely populated and was mostly used for the cultivation of vegetables and fruits. Under Constantine the cemetery had been moved to this area and it was also here that the first Constantinopolitan monasteries of Dalmatios, Akoimetoï, Dios and Studios were established. The rural atmosphere of the locality and the large hunting grounds encouraged the rich citizens to build residences and villas there.

The palaces of the nobles were situated within the Constantinian walls. They were gathered in residential quarters named after their aristocratic proprietors: Hormisdas, Antiochos, Lausos and Krateros. The latter was situated north of the Mese between the Philadelphion and the Holy Apostles. To make space, the Philadelphion was pulled down, leaving a five-metre-deep cavity which was covered by a ceiling supported on columns. On this platform, the house of Krateros was built, and the quarter grew around it among the ancient ruins. Moreover, at least three residences were built at the edge of the Great Palace, all for the female members of the imperial house: the Palace of Placidia, the House of Placidia Augusta, and the Palace of Marina.

⁴² It consisted of a ditch 7 m deep and 8 m wide, flanked by a crenulated balustrade as well as and the double circuit of walls: the lower outer wall was 8 m high and supplied with towers; the space between the wall was 14 m wide; the inner wall, with its crenulations and towers, rose to a height of almost 20 m.

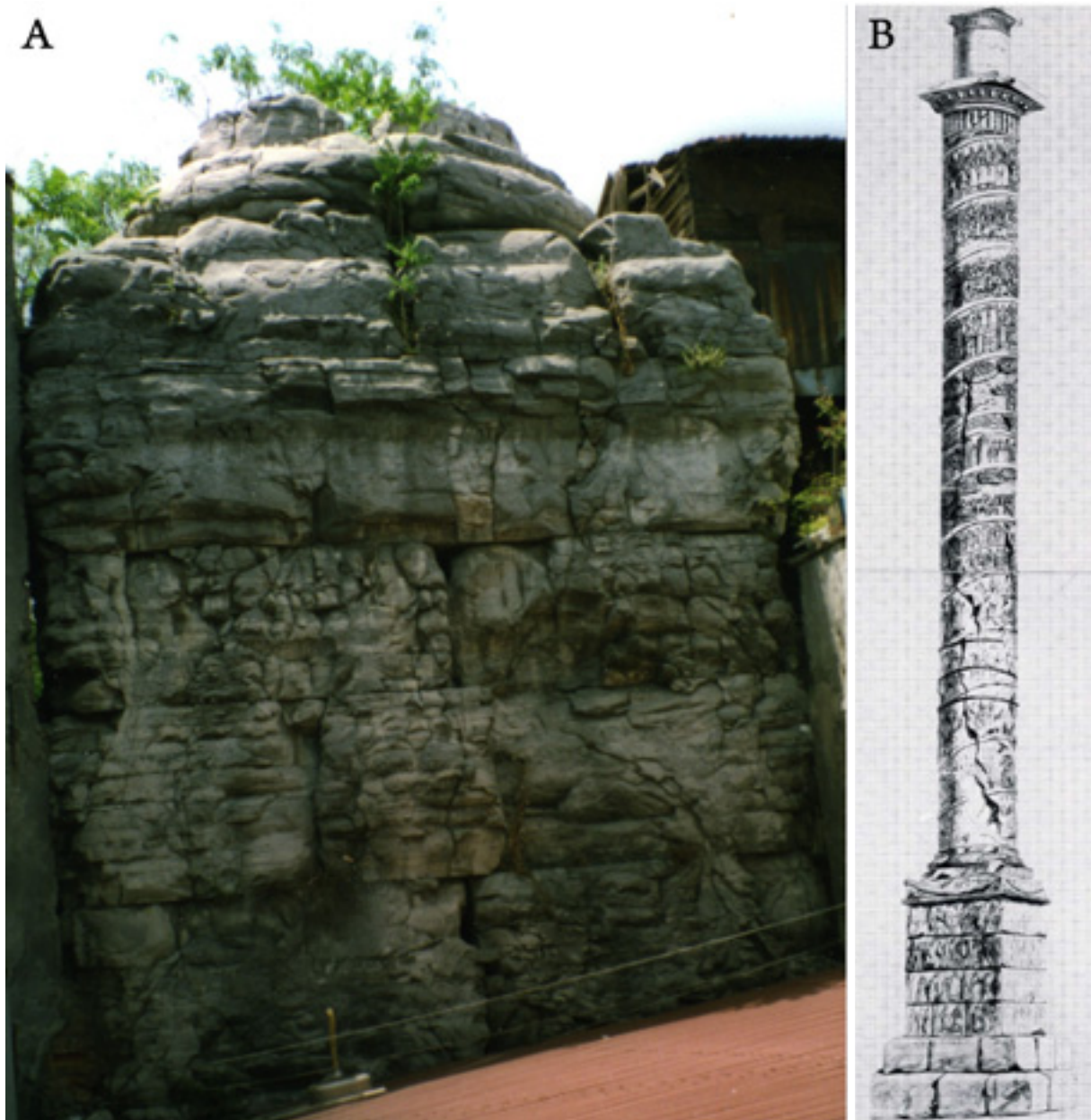


Plate 11. (A) Column of Arcadios. Photo by the author. (B) Column of Arcadios; 17th century drawing (after Müller-Wie-ner).

The public area of the city continued to develop in a westerly direction toward the city wall. The Mese went westward to the Forum Tauri, founded by Theodosios I in 393 (*Plate 10 A, B, C*). It had a large triumphal arch on each side, a basilica, and a monumental column decorated with a spiralling relief commemorating the military campaigns of the emperor.⁴³ Further in the western direction, two more *fora* were built along the main street: the Forum Bovis and, on the hills, the Forum of Arkadios (also known as the Xerolophon). The latter was also marked by a historiated column. (*Plate 11 A, B*)

The shops previously gathered under the colonnades of forums now moved to the porticos running along the main avenues. An interest in the display of

⁴³ Most likely the Forum of Trajan in Rome served here as a model.

antiquities continued and many public places including the Hippodrome and the Augusteion were enriched with newly acquired statues and monuments.⁴⁴

South of the Forum of Constantine was the *Nimpheum maius* or the *Hydreion megiston*, a large fountain and water tower which diverted the aqueduct water towards Perama and probably Hebdomon, where a very large cistern (130 x 80 m) was constructed, with a capacity of 125000 m³ of water. The smaller cisterns, some of them covered and others open, were spread in various areas of the city providing water for public and private baths. The popularity of baths made these buildings the favoured sector of imperial and noble munificence. The *Notitia* lists 162 establishments of this type, including the *thermae* Karosianai commissioned by Valens in 375, the Arkadianai in 395, the Honorianai in 412, and the Bath of Dagistheos which was begun by Anastasios I (491–518). All lavishly decorated in the Greco-Roman taste, they extended the spirit of *romanitas* to the newer areas of the city.

Infrastructure

The construction and maintenance of the entire water system was sponsored by the state, municipality and some private citizens. A special official with the title *comes* was responsible for the distribution of water resources, but it is unclear how access to the public water supply was regulated, other than that the quantity was measured by the diameter of the pipes.

Large quantities of grain, oil (mainly from Syria and Africa)⁴⁵ and wine, which were transported by sea, required new investments in harbours and coastal storage areas. In 362, the harbour of Sophia (*Portus novus* in the *Notitia*) was constructed on the shore of Propontis, to the west of which Theodosios added one more. Each harbour was a thousand metres long, and together with the Proosphorion and Neorion they provided four kilometres of waterfront, which was large enough to receive the boats carrying Egyptian grain. Like the capacity achieved in the 5th century by the town's water system, the dimensions of these harbours were never exceeded.

During the reigns of Valens and Constance II, one public oil storage unit and two new granaries were built next to the Proosphorion, followed by two more between the harbours of Sophia and Theodosios. In 455, Valentinian III established the *Modion*, a device for the official measurement of grain in the form of a pair of bronze hands fixed to spikes. The shape was to remind dishonest merchants that the penalty for cheating was mutilation. (*Plate 12*)

We know that between the years 370 and 430, approximately the same amount of free bread was distributed as during Constantine's time, even though the population of the city had greatly increased. However, no particular protests have been noted by the historians, which indicates that the inhabitants were not fully dependent upon this benefit. Obviously, the variety of fresh vegetables and fruits cultivated within the walls and in the area close to the city greatly

44 To the already large collection of the Hippodrome Theodosios I added an obelisk, a figure of the sea-monster Skylla, a gilded bronze *quadriga* and a statue of Heracles. The same emperor gave to the refurbished Augusteion a statue of Zeus originating from the sanctuary at Dodona in Epiros and a statue of Athena from Lindos in Rhodes; see Basset 2004, 148ff, 218f, 222–27, pl. 3, 27, 31.

45 It is not clear whether the inhabitants of Constantinople benefited from the subdivision of oil.



Plate 12. Inspection of a granary. Miniature in Chronicle of Skylitzes, 12th century. Madrid, Biblioteca Nacional, Codex Vitr. 26-2; courtesy of Biblioteca Nacional.

contributed to the daily food supply. It was estimated that the agriculture zone of Constantinople between the walls and outside the Theodosian wall was some 15 km². Used for cultivation of vegetables and fruits, this area could give food to 300000 persons throughout the entire year, provided that the species cultivated were changed from month to month in accordance with the fluctuations of temperature. It should also be remembered that, owing to its setting, Constantinople always profited from rich fish resources including seasonal migration of tuna.

Churches, monasteries and relics

The factor which greatly changed the urban character of the city was connected to the transformations within the spiritual and mental life of its inhabitants. In 392, Theodosios I promulgated a decree prohibiting the performance of pagan rituals, and in 435 Theodosios II ordered the destruction of pagan temples and monuments. Although these acts did not entail the immediate disappearance of the ancient religions and their shrines, they clearly paved the way for the expansion of Christianity, its institutions and the establishment of Christian ways of life.

In 397, the bishop of Constantinople received the title of patriarch and his authority was required for the fulfilment of some state rituals. The emperor's accession, which previously relied on acclamation by the senate and the army, was not valid without the ceremony of coronation performed by the patriarch. Deeply rooted ancient rituals which were particularly difficult to obliterate were gradually changed to conform to the spirit of the predominant religion. For instance, the acclamation of the Tyche-Anthousa figure⁴⁶ in connection with the festival commemorating the foundation of the city was dropped, although that part of the ceremony had a symbolic rather than a religious significance. Moreover, the Forum of Constantine, where the festival traditionally took place, was "Christianized". A rumour circulated to the effect that Constantine's honorific column and the space around it hid precious relics: the axe of Noah, the holy sponge and the twelve baskets gathered after the evangelic miracle of "the feeding of the five thousands".

46 The deity to which Constantinople was originally dedicated. The tradition of Christian dedication of the city grew with the development of Christianity, as noted already by Constantine's historiographer Eusebios of Cesarea (260–340). Eusebius, *Life of Constantine*, III, 48.



Plate 13. Translation of the relics of John the Baptist. Miniature in Chronicle of Skylitzes, 12th century. Madrid, Biblioteca Nacional, Codex Vitr. 26-2; courtesy of Biblioteca Nacional.

The process of Christianization also influenced the culture of baths and bathing, the phenomenon of antique urban lifestyle *par excellence*. Deeply rooted in social life and universally enjoyed, even by the clergy, the bath culture was difficult to erase from the daily life despite some attempts made by devout church fathers and ascetic monks. In order to solve the problem, a compromise was worked out and the baths were accepted as a part of Christian public services. They were used for baptisms and for liturgical ceremonies connected to the Easter celebrations. Some of them even received decorations representing Christian scenes.

The growing importance of Christianity was confirmed by the construction of many churches. In 425 the *Notitia* included fourteen, but some eighty years later, eleven more are noted, most of them built within the Constantinian wall. The multiplication of churches, which for the most part were privately sponsored, was not motivated from the pastoral point of view. Expensive and lavishly executed, they were – like the buildings and establishments of public utility before them – prestige foundations, which often expressed political ambitions. Such non-noble intentions were usually presented under the cover of pious deeds: to secure employment for several ecclesiastics, to give an architectural setting for a miraculous picture, or, as in most cases for newly acquired relics.

The process of collecting relics, which in Constantinople started in the second half of the fourth century, resulted in the amassing of an immense amount of holy objects, which greatly contributed to the city's fame. It was believed that the relics offered protection against enemy attacks, natural disasters, epidemics, and any kind of demoniac force.⁴⁷ The relics might also heal and work miracles, especially if adequately preserved and supported by proper rituals.

The first translations of relics were done between 356 and 360, apparently on the initiative of Emperor Constance II. The relics of Saints Andrew, Luke and Timothy were deposited in the Church of the Holy Apostles, while the bones of two Palestinian martyrs, Pamphilos and Theodulos, were placed in the Hagia

47 See for instance Johannes Chrysostomos' sermon "In martyres Aegyptios", 50, col. 693–698.



Plate 14. (A) St. John of Studios, the absid. Photo by the author. (B) St. John of Studios; western portico; courtesy of Maja Kominko. (C) St. John of Studios, floor mosaic; courtesy of Maja Kominko.

Sophia. The church built especially to house the relics of John the Baptist was erected at the Hebdomon.⁴⁸ (Plate 13)

Several new translations, including relics of biblical figures, such as the prophets Samuel and Isaiah, were carried out during the reigns of Arkadios and Theodosios II. The Hagia Sophia suffered a fire in 404, but was restored in 415 by Theodosios and subsequently endowed with important relics: the bones of the patriarch Jacob and John the Baptist's father Zachariah. They were ceremonially deposited in the church, with the participation of the patriarch, high ecclesiastics, the eparch of the city and the entire senate. Pulcheria, the emperor's sister, built a church in the palace of Daphne (south of the main palace halls) to house the right hand of Saint Stephan which she had received from Jerusalem, and the churches of Saint Laurentios and Saint Agnes for relics obtained from Rome. Together with her husband Marcian, Pulcheria founded the church dedicated to the Hagia Eirene as well as an oratory to Saint Isidore, situated in Perama at the Golden Horn, for relics of the martyr Cluo. In 450 the empress also founded a basilica in Blachernai (the north-west corner of the city) dedicated to Mary; however, this was situated outside the walls. The church was enlarged some years later by Emperor Leo, who built a circular reliquary chapel to house the *maphorion*, the "honourable robe of the Holy Virgin". The relic, to which Mary's girdle and headgear were later added, became Constantinople's *palladium*, believed to have the power that prevented the seizure of the city.

The nobility followed the examples of the rulers. The monastic church of St. John near the Golden Gate was built around 450 by the senator Studios for the purpose of housing the head of John the Baptist. Since the ruins of the building are still preserved one can form an idea about its appearance (Plate 14). The church was a basilica of average size (27 x 26 m) with a narthex, constructed of stones and bricks, preceded by a vast atrium and equipped with a gallery running above the narthex and the aisles. The interior was divided into three bays by two rows of *verd-antique* columns decorated with elaborate acanthus capitals which supported a richly carved entablature. The relic was deposited in the cruciform crypt, built below the centre of the altar area.

48 *Patria Constantinopoleos*, §145; Mango 1972, 29f.

Plate 15. (A) St. Polyeuktos; courtesy of Maja Kominko. (B) St. Polyeuktos, ornamental niche fragment. Photo by the author. (C) Venice, pillars from the Polyeuktos' church. Photo by the author.



A small martyrium of Saint Polyeuktos was founded by Empress Eudokia, and later re-funded and enlarged in 512–524 by her great-granddaughter, Anicia Juliana. The imposing building of fifty square metres was elevated on a platform and composed of a narthex, a projecting apse and six two-storey niches – *exedrae*. Most remarkable of all was the sumptuous decoration of the shrine: coloured marbles, glass and amethyst inlays on the floor, and mosaics on the wall. Of particular beauty were the deeply undercut, almost three-dimensional carvings with Christian and oriental motifs which covered the columns, capitals, spandrels and plinths.⁴⁹ Supposedly the idea behind such an exceptionally designed sacral building was to recall the temple of Jerusalem in the vision of Ezekiel, interpreted as a symbol of the universal church. (Plate 15 A, B, C)

The ecclesiastics of high rank also participated in the hunt for important relics with which to endow their churches and monasteries. In 471 Marcian, the “concierge” (*prosomonarios*) of the Hagia Sofia, acquired from Chios the relics of Saint Isidoros which he deposited in the Hagia Eirene. Around 470 Markellos the Akoimetos, who was searching for relics in Rome and Illirium, received the bones of Saint Anastasia and those of the Three Youths of Babylon. Some years later the deaconess Ariste brought the bones of Saint Artemios to Constantinople and placed them in the church of John the Baptist in Oxeis. In the sixth and seventh centuries the place became famous for the healings miracles which attracted crowds of pilgrims.

Some of the churches belonged to monasteries, which multiplied in Constantinople in the second half of the fourth century. According to the *Notitia* some fourteen monasteries were established by the year 448, but we know that at that time at least forty monastic houses were located in the city. Most of them were located on the margins of the city, in the under-populated areas outside the walls,

49 The church fell to ruin in the 11th c and its several architectonic elements were transferred to Venice after the Fourth Crusade. They can be seen on the facade of San Marco and in its piazza (s.c. Pilastri Acritani); the fragments excavated in the 1960s are kept in Istanbul's Archeological Museum.

first the Constantinian and later the Theodosian, called region XIV, as well as along the Bosphorus coasts and towards the Hebdomon area into Thrace. Owing to political, institutional and economical reasons they were rather small and only rarely did more than fifty monks gather. Generally the foundation of a monastery and its development depended on alms and donations from wealthy people, but some of the monasteries tried to generate their own income by selling the products cultivated on their lands or grown in their gardens.

However, not all the monks were part of the established institutions and recognized houses. There were also hermits and groups of ascetics in the city and in its immediate suburbs, as well as monks who circulated among the establishments. According to recent estimations the total numbers of monks in the mid-fifth century was between ten and fifteen thousand.

The monks of Constantinople played an active role in the daily life of the city and were engaged in politics of all sorts, not only religious. Many spiritual leaders gained a reputation for holiness and acquired a high social status. Nevertheless, at that time the monasteries did not provide their urban neighbourhood with any charitable, educational or pastoral assistance and their link to local society was in fact limited.

The first monastic community, the history of which is well documented, was founded in the place known as the Dalmatou by a Syrian beggar-monk named Isaac who arrived at the city already in the late 370s. He and his *confratres* played an important role in the religious politics of the capital during several decades. This was also the role of Isaac's successor, Dalmatos, who carried out a turbulent campaign against the city's archbishop, Nestorios. For this action he was able to mobilize some hundred monks, many of them from Constantinople, which proves that by that time the monks of the city represented a well-organized and influential political force.

The Akoimetai was another important monastery founded at the beginning of the fifth century. Located in a place called Gnomon, on the Asian side of the Bosphorus, it became famous for its rigorous rules promoting extreme asceticism and the tradition of perpetual communal prayer. There were also nunneries which usually served related charitable institutions. One of the largest, the Olympiades, located near the Hagia Sophia and under the special protection of the archbishop of the city, was founded by a wealthy, noble woman on her own estate. Planned as a retreat place for herself and her female relatives, this convent became one of the largest and most prosperous monastic establishments of Constantinople and housed some 250 nuns. The other nunnery, founded by a noblewoman from Perge in Pamphilia by the name of Matrona, introduced a new, more independent model of female monasticism in matters of economy, discipline and institutional arrangements.

In the later fifth century a particular community was established spontaneously around the charismatic Daniel the Stylite, a Syrian monk who installed himself on one of the columns in the city's northern suburb and acted as adviser to the emperors Zeno and Leo. (*Plate 16*) On the institutional level an interesting phenomenon emerged at the beginning of the sixth century. Some monasteries created federations which consisted of two or more joined communities. Often established by a common founder, they were similarly named. It was quite common that one of the monasteries remained in the city while the others were spread in the suburbs.

Plate 16. Daniel the Stylite; Menologion of Basil II, 11th century; Roma, Biblioteca Vaticana, Gr. 1613; after *Splendor of Byzantium*.



Recreation

The entertainment possibilities for Constantinople's inhabitants in this period of prosperity did not differ from the previous century. Although the gladiator combats were abolished by Constantine the Great in 325, they survived for almost a century after prohibition. The Kynegion where they were carried out alongside fights of wild animals was not abandoned until the late fifth century, after which it was used for the execution and burial of criminals. The Olympic Games were banned by Theodosios I in 393, but also survived prohibition into the first half of the fifth century.

In the fifth century the capital possessed four theatres, but less sophisticated performances also took place between the races in the hippodrome. This extra entertainment obviously raised the popularity of the establishment, but its real attractiveness sprang from the particular atmosphere of the place. At the Hippodrome people could freely express their emotions, and not necessarily those connected to the progress of the games. Since the place was often attended by the emperor and his dignitaries, it provided the citizens with an opportunity to express their approval or disapproval of matters of state policy. From the reign of Anastasios (491–518) onwards, the violence centred on the hippodrome escalated. The municipalities and the city guards were helpless. The priests who were always hostile to the hippodrome realized the seriousness of the problem. Johannes Chrysostomos, one of the most famous preachers of Constantinople and its bishop between the years 398 and 404, repeatedly criticized the sport in his sermons. However, it is worth remembering that as a good speaker who wanted to reach his simple-minded public he applied the terminology borrowed from horse racing when sending important spiritual messages. For instance, he symbolically calls the church a spiritual horse race and the prophets for the charioteers of truth, while the apostles are the horses in God's chariot. It is also symptomatic that he called the Hippodrome 'Satanodrome'.⁵⁰ The name was by no means irrelevant, because it was believed that the top charioteers who made their for-

⁵⁰ Johannes Chrysostomos, "De circo", 59, col. 568.



Plate 17. Basilica cistern.
Photo by the author.

tunes there were the sorcerers or customers of the magicians. To prevent these rumours, the competitors in the race customarily asked the priest for blessings, but the privilege was seldom granted.

The Hippodrome was also the place where tensions connected to religious matters were expressed. This is hardly surprising if we consider that the Christological and Trinitarian polemics of the fourth and fifth centuries were carried out on the streets as much as at the Church councils. The engagement of the common man in theological controversies surprised and irritated some people, who complained that it was not possible to shop at the market without witnessing the quarrels about the nature of Christ or the triune concept. Also, at the time of these polemics the words designating the religious adversaries, such as Manichean or Monophysite, were added to the stock of commonly called abuses.

Constantinople of Justinian the Great

It is difficult to determine when the development of Constantinople reached its apogee, but during the reign of Justinian (527–565) the city experienced a period of high prestige and cultural eminence. The emperor's ambition to reconstitute the Roman Empire in its entirety included a vision of a grandiose Constantinople. Despite his preoccupation with the fortification of the frontiers, he not only provided the capital with new monuments but also restored old ones. Since the state resources were reserved first for the army and for defence, the financial means for the building activities of the emperor were obtained from outside the state finances, possibly partly through the confiscations of properties belonging to his political enemies.

In the civic domain Justinian built a colonnade embellished with sculptures in the Arkadios quarter, established the Dagistheos *thermae*, constructed the Philoxenos cistern and enlarged the one named Basilica.⁵¹ (Plate 17)

Both cisterns represent interesting projects from an architectural and engineering point of view, with their forest of columns,⁵² a complex ceiling construction and re-used components originating from abandoned monuments and from outdated builder-stocks.

After the devastation of the centre of the city following the Nika riot in 532, the emperor restored the partly damaged Zeuxippos bath, a burned storehouse, the palace's vestibule (*Chalke*), the guard houses, and the Forum of Augusteion with the House of the Senate.⁵³ Opposite the latter, he raised his honorific column.⁵⁴ If the act itself derived from the custom of his predecessors, the monument differed greatly from the other columns: it was built of bricks and covered with brazen plates while the top-mounted figure of the emperor was a remodelled statue of one of the previous rulers.

To satisfy the citizens' needs for recreation and entertainment, Justinian laid out a park on the shore near the Arkadianai baths, a garden around the spring at Pege, and restored a theatre in Galata when the status of that suburb was raised to that of a city. For his own use, he rebuilt the Palace of Hormisdas, enlarged the Great Palace, and built some residential houses in the suburban area between the Constantinian and Theodosian walls.

Churches and Monasteries

Justinian was above all a great founder of ecclesiastic institutions and buildings. At that time the churches were not exclusively religious buildings, but also social establishments often connected to charity. Enlarged by several annexes, they housed, besides the orphanages and hospices also the notaries and schools. Despite the great demand in all these institutions for service personnel, Constantinople was full of unemployed ecclesiastics. The problem was obviously serious and not limited to the capital. When the multiplication of religious compounds did not resolve the matter, the emperor prevented further ordination of priests and deacons. Another way to restrain their number in the capital was to build the churches close to each other and require that one team of ecclesiastics cover the services in more than one place.⁵⁵

Justinian's chronicler Prokopios ascribes to the emperor thirty-three churches.⁵⁶ Besides the new foundations, several old sacral buildings were given an ex-

51 To a size of 135x64 m.

52 In Basilica there are 366 columns, most of them with identical acanthus capitals. In another cistern (sometimes identified with the cistern of Philoxenos) there are 224 columns but they are double, i.e. each column is composed of two, the one placed on top of the other and connected by a stone collar, see Müller-Wiener 1977, 280, figs. 316–317.

53 Procopius, *De aedificiis* I, x, 5ff.; Mango 1972, 108–110.

54 Procopius, *De aedificiis* I, ii, 1ff.; Mango 1972, 110f.

55 The ecclesiastics of Hagia Sophia (60 priests, 100 deacons, 90 subdeacons, 110 readers, 25 choir members, 40 deaconesses, 100 custodians) also served in Hagia Eirene and in the adjacent Hospice of Sampson.

56 Some examples of restored churches: Holy Apostles, St. Akakios, St. Agathonikos, Sts Cosmas and Damianos, St. Ia, St. Laurentios, St. Mokios, Sts Priscus and Nicolas, S. Pantaleimon and S. Platon. Examples of new buildings: St. Anthimios, Sts Menas and Menaos, Sts Peter and Paul, Sts Sergios and Bacchos St. Eirene in Galata St. Thecla, St.



Plate 18. Hagia Sophia.
Photo by the author.

tensive “face-lift”. All these measures were necessary because new relics and *sanctuaria*⁵⁷ were still streaming to the city and the old ones were in need of more spectacular settings. All translations and re-dedications were celebrated with grand pomp and accompanied by solemn processions and large festivities.

Among the churches constructed under Justinian's patronage, the Hagia Sophia was the supreme achievement, and as a tale transmitted by Prokopios' recounts, it was accomplished thanks to the advice provided by the emperor to the architects at critical moments of the process.⁵⁸ Built in the amazingly short span of five and a half years, on ground acquired after the destruction of the city centre by fire in the course of the Nika riot,⁵⁹ this domed, three-aisled basilica of enormous size⁶⁰ was the sole creation of two master-builders and engineers, Isidore of Miletos and Anthemios of Tralles (*Plate 18*). They applied the architectonic elements which were current at the time, but put them together in a unique combination. The daring construction of the dome mounted on drums above wide, barrel-vaulted, side recesses was too heavy for the choir side and both collapsed during an earthquake in 558. The second dome, reconstructed five years later, was raised six metres higher than the original,⁶¹ which diminished the greatly admired effect of the cupola “hanging in the air”. Also, the illumination of the interior was reduced after these changes because the large windows, which originally pierced the side walls of the nave, were covered in order to straighten the construction. (*Plate 19*)

Theodora, St. Theodota, St. Thyrsos, St. Tryphon. For a full list, see Procopius, *De Aedificiis* 1,4,6,9.

57 Objects that were in physical contact with the relics.

58 Procopios, *De aedificiis* I, 23ff; Mango 1972, 72–78; *Narratio de S. Sophia*, Vol 1, 74ff; Mango 1972, 96–102.

59 It is not excluded that the plans for the church were ready before that event.

60 The main corpus approx. 70x74 m; full length about 135 m; the cupola (restored after 557) 31.8 m in diameter and raised above floor level 55.6 m.

61 This better calculated construction was carried out by Isidore the Younger (nephew of Isidore of Miletos).

Plate 19. Cupola and half-cupolas at Hagia Sophia: view towards the north-east. Photo by the author.



The decoration of the interior was magnificent. Only partly preserved, it can be easily visualized on the basis of the descriptions included in several panegyrics which praise the church and its founder. The walls, covered by multicoloured marble slabs, were poetically compared to meadows, while the effect of the shimmering gold mosaics of the dome and ceilings was described as “glittering rays which strike men’s eyes at midday in spring”.⁶²

The same texts describe splendid, liturgical furnishings which have long since disappeared: the chancel screen and the ciborium with a pyramidal canopy over the altar, both riveted with chiselled silver plates; the *sythronon*, an imposing seven-step seat for the clergy raised in the apse; the *bema* fenced off by a screen of twelve columns and connected to the ambo by the *solea*, a passage protected by a parapet of marble. Alongside the relics that already made the church famous, new ones were added: the boards from the well where Jesus talked with the Samaritan Woman, four trumpets of Jericho, and, most important, some additional fragments of the Holy Cross.

The Hagia Sophia is indisputably the highest artistic achievement of Christian architecture. However, its supremacy, visible above all in the quality of the architectural plans and interior designs, contrasts with the imperfection of the technical realisation and the defective maintenance of the material, which clearly show a decline in traditional craftsmanship. Already during construction the building began to lose its equilibrium, and means not always motivated from an architectonic point of view were applied in order to follow the building plan. The marble details, sculptures, columns etc., even though individually produced, show a variety of sizes and proportions. The plinths and bases of the columns are carelessly cut and produced from the same block of stone, and the trunks are imperfectly rounded. Lack of symmetry is visible in the placing of columns: the upper order does not line up with the lower. The same can be said about the narthex: the

⁶² See Paulos Silentiarios, “Hagia Sophia” (probably delivered on 6 January 563); Mango 1972, 80–96.



Plate 20. Ss. Sergios and Bakchos. Courtesy of Maja Kominko.

articulation of the outer and inner walls by the pilasters is not related, and the inner and outer doors do not match each other.

Like the churches and ecclesiastical institutions, the monasteries grew in number. During the period 450–520 reportedly as many as 150 monastic houses were in operation. They represented large-scale adoptions of the monastic life, from the simple hermitages and *lauras* to the fully fledged *coenobia* of significant size, both male and female. This new generation of monastic communities occupied themselves with improving the internal organization and producing a wider range of services to benefit the public. For instance, the monasteries started to organize shelters for visitors, pilgrims and homeless people alongside the regular distribution of alms – the activities which were already imposed on them by imperial legislation.⁶³ It should be pointed out, however, that in this matter, Constantinople was very much behind in comparison with the other large religious centres such as Jerusalem, Antioch and Alexandria. It is not surprising, then, that Justinian himself encouraged the improvement of monastic internal affairs in the capital and took an active part in the movement, among others things by dealing with the legal matters and regulations. All this contributed to the integration of monks into Constantinople's ecclesiastical and civic structure and in consequence gave to the monastic establishments some institutional stability and a guarantee of continuity.

Although the monastic written sources of the period are scarce, we learn that besides the Dalmatou – which remained the city's most prominent institution – the Chora monastery, founded about 536 in the northern corner of region XIV, became famous thanks to its engagement in a wide range of charitable activities. The sixth-century Christological debates, struggles and persecution brought to Constantinople a stream of fleeing Monophysites and resulted in the establishment of Monophysitic monasteries. The first was Justinian's founding of the Sergiou on his property in the centre of the old city close to the Hormisdas palace; it reportedly housed several hundred monks. (Plate 20) Another such monastery was located in the suburb of Sykai (Galata), housed in Theodora's villa, which the empress had given to the refugee anchorite Z'ura and his followers who fled from

⁶³ *Codex Justinianus* 1,3,32.

Amida. The other six monasteries founded there around 520 were, however, clearly Chalcedonian, which shows a fruitful attempt by the imperial couple to create a monastic centre, indifferent to the doctrinal differences.

The impact of the Monophysitic monks on the social life of the city was important. It resulted in, among other things, the opening of a hospice for strangers within the area of the imperial palace, the arrangement of a public kitchen that served as many as 600 meals a day, and the establishment of several help centres for the poor and sick. These commitments to charitable activities distinguished them strongly from the local monasteries which left these kinds of activities to secular or Episcopal authorities.

Time of changes

A general view of the Justinian Constantinople allows us to observe that the city witnessed the demise of certain architectonic traditions that had dominated in the previous three centuries. In the sphere of civic architecture one can note above all a degradation of the classical style and a decline in building standards. The classical over-dimensioned and over-decorated monuments gradually disappear together with their characteristic elements such as porticos and classical orders. The new constructions are smaller in scale and executed with very limited material means. The walls are made of stone in the lower parts and of bricks in the upper. In order to spare the latter, a large mortar shift was applied, although this method made the whole construction weak. At that time some old monuments already lay in ruins, and the building *spolia* gradually came into use.

In the church architecture the classical, spacious basilica vanishes, possibly because of a lack of appropriate beams to cover the large ceiling of the central nave. These beams had previously been transported from Lebanon and Cyprus. Horizontal entablature went out of fashion and instead of the intricate sculptured capitals, the impost type appeared. On the floor, large marble plates or elaborate mosaics were replaced by the simpler and less expensive *opus sectile*. The emperors' favourite red porphyry transported from Egypt disappeared already about 450.

Justinian's Constantinople was still a very densely populated city of about a half million people. The social services and privileges continued but it seems that their character changed. Thus, we learn that the imperial couple founded several hospices for indigent people, refuges, guest houses and even a reformatory for fallen women, most of them as conjunction to churches. However, free distribution of bread was only exceptional and the Constantinopolitans were forced to rely on their own sources for sustenance. Such a decision was not motivated by a lack of grain. It is known that only the amount transported from Egypt alone, some 310000000 *modi*⁶⁴ was enough to feed more than one million citizens.

The lifestyle gradually changed as well. The Church which treated the theatre, circus and hippodrome as the source of depravation of the Christian souls and the main competitors to the pockets of the faithful, made many attempts to eliminate them from public life. While banning of the wild animal fights was supported by Justinian, his attitude towards the theatre and particularly the pantomime was not negative. However, his *Corpus Juris Civilis* contains the para-

⁶⁴ That is 8 million *artabae* (1 *artabe* = 3 bushels); to transport this amount, 3600 boats were used (each with a capacity of about 10000 *modi*).

graphs which forbade the ridiculing of religious matters on the stage and even the wearing there of ecclesiastic and monastic cloth. The Church, for its part, also showed flexibility in trying to respond to the people's needs of spectacles and shows. Some simple plays performed by the clerics were introduced to the churches, alongside the religious dramas on Christmas Day and the Epiphany, but we may surmise that it was the liturgy, which had become pompous and visually impressive, that was thought of as a replacement of the old entertainment forms. Particularly spectacular were the celebrations attended by the emperor and his court. They involved a great number of clergy and imperial guards of honour, all ceremonially vested and carrying crosses, candles, insignia and standards. One can get a glimpse of such a ceremony on the donation mosaic in St. Vitale in Ravenna, which possibly represents the First Entrance of the Divine Liturgy, the most solemn part of the mass. It was also not without importance that the faithful, besides witnessing the ceremonies, were able to take an active part in them, joining the clergy and court in the processions which either were conducted inside of a church or moved through the city from one shrine to another.

The Hippodrome still played an important role in the political and social life of the capital, but after the bloody suppression of the Nika riot, which had started in connection with a game, the factions were dispersed and their significance faded, probably with the full acceptance of the Church and the municipal council.

Towards the medieval town

The break-up of Justinian's empire, which stretched from Gibraltar to the Euphrates and from the Danube to Middle Egypt, began already under his immediate successors. The invasion of the German tribes into the West, the settlements of the Slavs in the Balkans, and the definitive loss of Syria, Palestine and Egypt to the Arabs (640) set the outer limits of Byzantium from Italy and the Ionian Sea on the one hand to, the Crimea and its hinterland on the other. It was from that reduced area that the state and the capital drew their revenues and manpower resources.⁶⁵ Constantinople's population numbers dwindled from about 500000 in the mid-sixth century to some 50000 or less two centuries later.

The loss of Egyptian grain involved a major readjustment of the city's economy. It increased the dependence of Constantinople on the Thracian and Anatolian sources which were now supplemented by produce from the city's hinterland. However, the capacity of that area was limited. The permanent import of grain from abroad during previous centuries made production around the city unprofitable, and the suburb was traditionally used for pasture, vegetable gardens and orchards, several of them belonging to the monasteries.⁶⁶ It seems that after the 640s and 650s, the chief suppliers of grain were Thrace, Paphlagonia, Pontus (to some degree) and north-west Asia Minor. When Thrace was devastated by the Arabs in 674 and again in 717, the grain came almost entirely from the regions around the Marmara and sometimes the supplies reaching Constantinople were not sufficient. In consequence people learned to accept alternative form of

65 It is estimated that the total loss of revenue for the empire in the seventh century was 55% of its sixth-century income.

66 In the 6th – 7th centuries about 22 monastic houses existed in that area.

sustenance. During a food crisis that occurred in the reign of Emperor Tiberius (578–582), barley and dried vegetables were distributed instead of grain. It should also be remembered that at that time the free distribution of food for the citizens of Constantinople came to an end as it was considered too large a financial burden for the state. After Emperor Herakleios' (610–641) *themata*-reform⁶⁷ the people had to fight to receive bread.

One of the important factors which alleviated the subsistence problems was the demographic crisis of the sixth and seventh centuries. The population of the empire, already reduced by half owing to the loss of large areas, was affected by recurrent epidemics.⁶⁸ The epidemics started at the beginning of the 6th century, and the most widespread occurred in 747. It is estimated that at the end of the calamities about 50% of Constantinople's population had vanished.⁶⁹ We learn that in this desperate situation the prescription concerning burials outside the city walls was abandoned. After the outbreak of pestilence in 542, the dead bodies were thrown down from Galata. In the year 747 ditches, cisterns and gardens were turned into graveyards.

It has been argued that the time gap of 150 years between the devastation of the Valens aqueduct by the Avars in 635 and its restoration by Constantine V (741–775)⁷⁰ is an indication that the water supply system was not functioning properly.⁷¹ However, there are documents which prove that the aqueduct was repeatedly restored, the larger maintenance being undertaken by the emperors Justin II (565–578) and Maurice (582–602). An exception was the water junction of the *Nimpheum maius* which disappeared at that time, but on the other hand the city acquired an additional cistern known as the Forty Martyrs, built in 609 by Emperor Phocas. All the large *thermae* – Zeuxippos, Konstantianai and Dagistheos – were still in use.⁷² It seems, however, that free entry was no longer allowed and that the buildings were not properly maintained. In addition to these large surviving establishments, some small baths were in use, most of them constructed in connection to hospitals and hospices. Some were connected to the religious foundations (*diakoniai*) and functioned as *lousmata*, that is, as ritual baths – another attempt to transform an ancient custom to a Christian practice. The luxurious baths which kept the old standards now belonged exclusively to the emperors and were built inside their residences.

Besides the water supply system, fortification was another utilitarian work which was constantly maintained by the state, and special imperial factories were established to produce bricks exclusively for that purpose. The walled inscriptions written on the marble and brick plates indicate the dates of the work, as well as the names of the rulers involved. The damage caused by the earthquake in

67 The institution of soldier-farmers.

68 The most intensive took place in the years 555–6, 560–1, 572–3, 585–6, 592, 598–9, 608–9, 618 and 697–8.

69 In the absence of serious textual evidence for the calculations, the opinions on the population of Constantinople in the 8th century differ greatly, from 40000 to 150000.

70 It is not clear whether the aqueduct was restored to its full length, i.e. to the Bulgarian border, but judging from the documents it was a large operation.

71 This information, together with the records telling that the enterprise was carried out by foreign labour, was also used as an argument in the discussion of the fall of Constantinople's population in the 7th century.

72 The Zeuxippos bath functioned until 713 when they were transformed into a casern and a prison called Numera; the Konstantianai were active until the middle of the 8th century and that of Dagistheos were abandoned first in the 9th century.



Plate 21. Scenes of hunt and animal fighting in floor mosaic of the Great Palace's peristyle. Photo by the author.

557 was repaired by Justin II. Between the years 685 and 711 Justinian II rebuilt a large part of the walls, but the more extensive renovation and modernization work was carried out by Anastasios II in 714 for fear of massive Arab attacks. A new earthquake in 740 forced Leo III to carry out new reparations, which were continued by his grandson Leo IV, who rebuilt several towers in the southern part of the wall-circuit.

Renovations and alternations also took place in the harbours. In 561 Justin II undertook the restoration of Julian's port (Sophia) on the Marmara, which had burned in connection with the circus riots. At that occasion the whole neighbouring area became a place of extensive building activity. Around the newly constructed palace of the empress Sofia a new quarter developed, with the hospital of Nerses and three churches: Sts. Michael and Tecla, St. Probos and St. Pantaleimon. The renovation of the harbour was an essential enterprise as at that time it was the only place where all commercial shipping was directed. The Theodosios harbour, long obstructed by silt, was gradually abandoned, while the Neorion harbour in the face of Arab threat was dredged and transformed into a military base where the warships were built and garrisoned.

The rather limited building activity in the public sector did not affect the development of the imperial palaces and villas. Beside the new residence of Empress Sofia, the Great Palace was extended to the Marmara Sea by her husband Justin II. The rebuilding incorporated three older residences, among others the palace of Hormisdas. The palatial *peristyle*-mosaic, excavated sixty years ago and restored in the 1980s, is connected with the palace enlargement by either Justin II or Herakleios. Justin's successor, Tiberius I (578–582), continued construction in the northern part of the imperial residence. Some hundred years later Justinian II (685–95) developed the area around the main dining and reception hall – the Chrysotriclinios – and surrounded the new residence within a fortified wall. Unlike the old palace which was composed of several and largely dispersed buildings, each serving a specific function, the seventh-century palace gathered



Plate 22. Children playing hippodrome games in floor mosaic of the Great Palace's peristyle. Courtesy of Maja Kominko.

all the official functions to the ceremonial centre of Chrysotriclinios which was redesigned and redecorated for this purpose. It was connected to the imperial apartments which included the luxurious baths. The old Constantinian buildings, which were left outside the new palatial space and seldom used except for special ceremonies, gradually decayed.

Monasteries and Churches

Constantinople's religious life was intricate in many aspects. New relics continued to arrive, mostly from the lost eastern provinces. Added to those already in the city, they raised the capital to the position of the New Jerusalem and the main pilgrimage centre of the whole Christian world. However, owing to the economic decline the precious relics were seldom honoured by foundation of new shrines. Most of them came to rest in already existing churches with the exception of particularly valuable items which were deposited in the chapels standing within the palace area. This was the case of Moses' staff which during the time of Justin II was solemnly placed in St. Theodore Chapel close to the *Triclinium*, and it also applied to the *acheiropoiets* icon of Christ from Camuliana⁷³ and the precious instruments of the Passion brought from Jerusalem by Emperor Herakleios.

Generally the number of churches which were built after the Justinian's reign was limited. Rather than constructing new buildings, older ones were restored or rebuilt, among others the Hagia Sofia which had been damaged in part during the earthquake of 740. The new churches were generally small in size and built on a cross-in-square plan, more suitable for modest shrines. In all these enterprises the builders continued to economise with materials. It was in this context that brick decoration made its appearance and flourished; marble was almost inaccessible, even from the adjacent Proconessian quarry on the north shore of Marmara, which closed in the seventh century for lack of workers.

The same limitations affected the founding of monasteries. Very occasionally a new condominium appeared while the old ones struggled to survive. Not all of

⁷³ Zacharias Rhetor, *Historia Ecclesiastica*, XII, 4; Mango 1972, 114f.



Plate 23. The Column of Flagellation in the Church of the Greek Patriarchate. Photo by the author.

them met the challenge. The pro-Chalcedonian position represented by the court and patriarchate, which resulted in the persecutions of Monophysitic monks, gradually destroyed their monasteries together with the network of related charitable institutions. Moreover, the monks as a group stopped playing a significant role in the religious politics of the city, and from the imperial and ecclesiastic point of view they were no longer considered worthy of endowment and support. If new monastic houses came into existence it usually happened by conversion of a local aristocratic property into a monastic establishment, as was the case with the Phlorou monastery founded by the senator Phloros, who after the loss of his family in a plague decided to enter monastic life. It is also noticeable that at this time the monasteries, famous for their discipline and hard rules, were used as places of confinement and punishment or simply as prisons for socially or politically inconvenient persons.

The traditional, very public forms of entertainment, now deprived of their original character and appeal, do not seem to have been attended by a significant proportion of the public. The Hippodrome games were formalized and became part of the imperial ceremonies. Moreover, their number was reduced, and only on special occasions, usually connected to state celebrations (triumphs, imperial weddings etc.) were extra races organized. There was no place for the traditional, tension-fraught rivalry between the factions. The top charioteers were no longer the object of cult. One could say that, owing to the long but successful campaigns of the church, they were replaced by the saints, relics and religious leaders. It should be noted, however, that the chariot races – although no longer a popular sport among the masses – did not vanish completely. They were held with the

aid of amateur competitors in the suburban, privately kept hippodromes, most of which belonged to the emperors and the nobility. (*Plate 23*)

The theatre also declined. The ensembles, which were no longer centrally funded, changed into travelling troupes which were only privately engaged. In 691, at the Church Council known as “in Trullo”, three canons were formulated against theatre. These forbade the clerics and monks to attend any kind of performance, and they condemned the pantomime and mime plays as well as the pagan-tinted festivals, particularly if they involved a woman dancing in public. Wearing character masks and the clothes of the opposite sex was also forbidden. In the case of pantomime the ban was hardly needed because the plays, usually based on the pagan mythology, were now comprehensible only to the highly educated elite and attended only by this small group. Generally, secular learning was not promoted and knowledge of ancient traditions was limited at all levels of society.

Although Constantinople was still filled with physical remainders of classical antiquity,⁷⁴ these were no longer understood, their original purpose and function being entirely lost. The statues were associated – by the common man but not exclusively – with pagan sacrifices, sorcery or Christian martyrdoms, and as such they were feared for hidden hostile powers.⁷⁵ Also the old inscriptions were regarded as unintelligible and alien. It was believed that they were capable of providing prophecies about the fate of the emperor, the city and its inhabitants, but that the exposition of these mysteries required the specialist knowledge of philosophers or magicians. To make all these objects less frightening they were re-interpreted in a Christian, usually biblical spirit, the well-tried way applied in previous centuries. It is not implausible that similar thinking was applied when the ancient secular buildings were transformed into churches. We may recall at least two examples of such churches: Saint Euphemia and Saint John the Evangelist, both of which were rebuilt from parts of palatal complexes belonging to Theodosios II's dignitaries Antiochos and Lausos, respectively.

We may assume that such enterprises would not have been possible if the position of the official church had not been very strong. Indeed, in the seventh century the institution developed into a mighty political and ideological power conceived as a guardian of tradition and interpreter of current religious and public affairs. It was also an effective social organization which, when the state public services weakened, took over part of their duties. Thus, besides the obligations which were dictated by the evangelical teaching, such as concern for the indigent, strangers, widows, orphans etc, several ecclesiastic foundations started to act as the redistributors of food and other necessities, dispensers of justice, controllers of the market and above all as builders. Alongside this control of the everyday life, the Church distanced itself from the faithful on the spiritual level. Increasing introversion of orthodox culture was particularly noticeable in the changes in the religious rituals. The processions outside the church, which often turned into folk festivals, were reduced. Part of the holy liturgy and some preparation rites were no longer exposed to the religious public but instead performed behind a closed altar screen. The sermon often lost its character of a public speech comprehensible to ordinary people and became a theologically advanced discourse.

74 It was estimated that at the transition between the 7th and the 8th centuries about a hundred antique pieces were still on display in the city.

75 It was thought that the only way to destroy them was by burial. In that context many metal statues were melted down and struck as coins.

Conclusion

The main lines of Constantinople's urban development in its three-hundred-year existence, briefly reviewed in this chapter, enable us to present the basic shape of this process and to try to identify the most important characteristics that distinguish the city that emerged at the beginning of the fourth century as the capital of the East Roman Empire, from the seventh-century town at the threshold of the Middle Ages.

Constantinople was created by Constantine and his planners as a Roman imperial city, which in addition to stable and well-organized infrastructure contained all the elements of late classical urban design. A monumental set of inter-related yet independent civic spaces were filled with official buildings presenting a particular type of decoration – the whole responding to the city's grandeur implied by imperial patronage and defining urban life in its most public aspects. Four sectors of the city represented its main points: the political sector, with the palatial complex; the civic with the Senate and associated buildings; the social, with the largest *thermae* (Zeuxippos) and the Hippodrome; and the religious, with the temples of the Akropolis and of the Basilica-complex. In this sense Constantinople was no different from Rome or even from any late Roman city. However, what made it special was the introduction of church buildings into important parts of the public space, the deliberate move to integrate Christianity into the Greco-Roman tradition, and the creation of favourable conditions for peaceful coexistence of the new religion and the old cults.

In the years that followed the city continued to grow. The infrastructure was well organized, the great civic projects still undertaken. It is in the fifth century that Constantinople's numerous harbours and water supply system reached the height of their capacity, while the new fortification system applied the latest achievements of military architecture and technology. Generously planned public spaces and the institutions they housed created a spectacular setting for ceremonial occasions and appropriate centres for human interaction on a grand scale. The splendour of the city had the ultimate goal of expressing the dynastic greatness of the emperors and the notion of unrivalled imperial rule.

Concomitantly, however, essential changes took place. Under Theodosios' rule Christianity became the empire's official religion, which was followed by suppression of the Hellenistic cults. The need to accommodate to Constantinople's scheme Roman spiritual practices was no longer felt. Whereas the religious foundations of the Constantinian city were divided more or less equally between pagan and Christian, by the time of Theodosios the temples had almost disappeared while the number of churches and monasteries had increased. Although the character of Constantinople as a metropolitan entity remained constant, its ethos had changed. The city had been "Christianized" foremost by its acquisition of relics. The holy objects and the establishments founded to house them became an important part of the urban landscape. The Christian population, now in the majority, considered the Hellenistic traditions alien and even hostile. For Constantinople the point of reference was no longer Rome and the idea of *romanitas*, but Jerusalem and the fame of the Holy City.

The reign of Justinian is regarded as a bridge linking the Late Antique/Early Christian period to the Byzantine Middle Ages, with all transformation processes in full bloom. It is well known that the emperor went down in history as the greatest builder of the city. However, his plan to revitalize the capital, albeit com-

prehensive, never intended to transform its basic structure. There were none of the great civic projects comparable to the Constantinian and Theodosian urban development, just maintenance of the existing infrastructure. The restorations undertaken after the Nika riot, although often extensive and grand-scaled, did not change the plan of the city. The main efforts were focused on the welfare of religious establishments. The resources which once went into public works were now used for the construction or reconstruction of churches and the endowment of charitable institutions. The great number of churches, monasteries and especially shrines for important relics allowed Constantinople to identify itself as a holy place rivalling Rome and Jerusalem. The administrative and social structures that organized the capital's public affairs were run by the Church and as such underwent significant transformations. The daily life, less public now, concentrated around the churches which became the heart of the city. The complex of the new Hagia Sophia, which dominated in the centre of the old, public quarter, was regarded as a symbol of the capital's redevelopment. Built and decorated with precious materials collected from the whole empire, the church reflected the power of the capital and provided an appropriate background for imperial ceremonies in the same way as the Hippodrome had done.

The immediate cause of the final step from Antiquity to the Middle Ages in the Eastern Mediterranean world was military and political. The major part of the territories controlled by the Romans was conquered by Islam, and most of the urban centres experienced economic crisis. Constantinople was not an exception. Depopulation of the capital caused by the diminished area of the empire and repetitive plagues, followed by transformations within the infrastructure and the introduction of previously excluded solutions in the city planning, changed the urban landscape and gave the city a rural character. The powerful Orthodox Church, which now took over the responsibility for crucial branches of the public sector such as social care, justice, economy and parts of the food distribution, controlled several areas of political and civil life. Old religious and social customs were totally abandoned, and the knowledge of the Hellenistic past along with an interest in antiquities survived only to a small extent within the palace and the aristocratic milieu.

It is apparent that seventh-century Constantinople only slightly resembled the imperial metropolis of the time of Constantine the Great. Its institutions, social relations and belief system, as well as the mentality of citizens and their visual culture, had been gradually transformed in response to changing living conditions. This particular capacity for adaptation, which was not mastered by many other urban agglomerations of the Eastern Mediterranean, guaranteed the continuous development of Constantinople and enabled it, despite the periods of decline, to maintain its position as the most prominent city in the Byzantine Empire.

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14. The Urban Anthropocene: Lessons for Sustainability from the Environmental History of Constantinople

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ABSTRACT

Constantinople is a city whose origin can be traced back to the establishment of Greek cities and colonies in early antiquity. Eventually it became the capital of the East Roman Empire, and since then its major role in the region has not diminished, whether under the rule of Byzantine emperors or Ottoman sultans. For more than 2000 years the city and its inhabitants have endured numerous changes and crises. Plague, war and economic regression have at times reduced its population to only a fraction of the previous size. The city has been subject to numerous sieges, the longest lasting eight years! Conquered only once prior to the major transformation in 1453, the city flourished again after each crisis and today it is still an important centre in this part of the world, on the border between the Mediterranean and the Black Sea.

How could Constantinople maintain its leading position for such a long time, after suffering so many crises? In this chapter, the authors emphasize that the ability of a city to survive under stress has its fundamental origins in how the city was organized and maintained. Special focus is put on the organizational and ecosystem services aspects of urban agriculture in the city. The authors explore how the inhabitants of the ancient city of Constantinople managed to maintain a resilient food supply system.

Constantinople differs in many ways from our modern cities, which are dependent on resources from a global hinterland that are transported using fossil fuels, and thus it can serve as an educational example for our time. At its first peak during the 6th century it was dependent on a complex grain transport system with ships travelling all the way to North Africa. This system collapsed in conjunction with the Arab expansion in the 7th century, and the collapse became a major part of a long recession that profoundly affected the city. That the city nonetheless survived cannot be explained by any single factor. The answer must be sought through a holistic perspective in which the variety of resource assets is seen as playing a major role. A particularly interesting aspect, related to today's global transport system, is the urban agriculture system within and just outside the city walls. The walls did not constitute the limits for a densely populated area. They rather delimited an area with dispersed "sub-communities" and numerous acres of, for example, orchards and vineyards. These areas could apparently sustain the population with a considerable amount of food and probably were important for the city's ability to withstand sieges and periods of food shortage. This system was continuous and was maintained by the inhabitants' living memory as well as by important institutions. In our society, where the supply of food is considered as something obvious, one can question whether we lack memory as well as preparations for similar crises despite the fact that the food supply crisis of the Second World War is only 65 years behind us.

Introduction

In the last two hundred years, modernity and success have been associated with the city. Urbanization has been a key element of modernization.¹ The city has been largely understood as distinct from natural and agricultural landscapes² and increasingly also distinct from industrial landscapes. The modern, future-oriented city has been disassociated from organic life-sustaining and preserving processes in what has essentially been a spatial division of labour. This urban paradigm has emerged at the same time as humanity has entered the Anthropocene,³ implying that humanity since c. 1800 has been the dominant agent of change on the planet, an idea which has been aired for a long time⁴ but which has only recently become more comprehensively underpinned by empirical observation and scientific analysis.⁵

With increasing urbanization it is safe to say that the main driver of global change rests in urban areas. We are thus, after two hundred years of the Anthropocene, entering what may be termed an Urban Anthropocene. Some features of the "modern traditional" city paradigm under the Anthropocene have been: a tight urban core, a relatively high density of population, high property prices implying prevalence of many high buildings, a predominance of hard covered areas, and a very large prevalence of motor vehicles, including many private cars. Although this has been the norm it should be recalled how recent and still quite

1 Eisenstadt 1966.

2 Williams 1973.

3 Crutzen & Stoermer 2000; Crutzen, McNeill & Steffen 2007.

4 Marsh 2003 [1864]; Lowenthal 2000.

5 Meadows *et al.* 1972; Rockström *et al.* 2009.

rare this paradigm is. Only a few generations ago most cities still had strong rural features. In fact many of these features still exist today, yet the presence of urban wildlife and green areas has often been overlooked in the literature on cities.⁶

The arrival of the Urban Anthropocene will probably induce further changes. While the dense, motorized city is still a dominant paradigm there is already an emerging counter-narrative⁷ of urban development which emphasizes the co-production of rural and urban geographies,⁸ the importance of greenways and green structures,⁹ and other features that identify the urban and peri-urban regions as important havens of biodiversity and ecosystem services,¹⁰ and as contributors to human health and well being. We are currently experiencing what may be the beginning of a shift in the “urban mind” back towards more sustainable cities with new and closer relations with nature, agricultural and industrial production landscapes, and which will sometimes make it necessary to question the increased dependency under the Anthropocene on a distant supply of resources and reception of wastes, and thus distant and scattered ecological footprints.

In this chapter we argue that, when transforming cities to make them more sustainable and resilient to shocks, it is best to recognize their long-standing roots in previous urban centres. As cities now try to reorient themselves and seek more viable relations with their outside worlds, they would do well to seek their role models in the patterns of urban mind and urban adaptation that existed in pre-Anthropocene periods of human history. This chapter explores in what ways the ancient city of Constantinople over its more than 2000-year history has managed a resilient production of ecosystem services and other resources for its citizens.

For many years the eco-optimal urban form has been the subject of debate.¹¹ Comparisons have been made, for example, between the very compact Asian city and the traditional, mixed, semi-suburbanized European city. Although some urban structures are clearly unsustainable, perhaps most notably the sprawling low-tech North American cities based on fossil-fuelled automobiles, no firm conclusions can be drawn. New technologies and energy regimes can also change current levels of sustainability and turn a less compact city into a resilient sustainability refuge, provided material circulation is reduced and mobility is eco-efficient.¹²

It seems clear, therefore, that cities have a wide variety of spatial choices where the alternatives may or may not be compatible with sustainability. Some of those choices became obscured by the rampant growth of conventional modern cities in the twentieth century. Out of a broad and lively discussion of future cities that occurred around the turn of the 20th century only a few stylized ideas survived.¹³ In particular the discourse of the urban region, as proposed by the Scottish sociologist and reformer Patrick Geddes, was sadly neglected. These ideas, later developed further by Lewis Mumford in the United States,¹⁴ proposed a holistic view of a wider ecological region where self-sufficiency of many raw materials,

6 Braun 2005.

7 Nye 2003.

8 Cronon 1990.

9 Fabos & Ahern 1995; Fabos 2004.

10 Bolund & Hunhammar 1999.

11 Höjer *et al.* 2010.

12 Newman, Beatley & Boyer 2009.

13 Hall 1988.

14 Luccarelli 1995.

food, and agricultural products was an important feature. Geddes was well aware of previous attempts by von Thünen and others to analyse the relations between an urban centre and its sustaining countryside. Geddes's innovation was that he saw this less in geometrical and more in functional terms, envisioning what he called a conurbation, which can best be understood as a spatial assemblage of urban dwellers and green areas for production or recreation. He was also deeply interested in the metabolism, or the human ecology, of the conurbation, taking into regard what impact the city had on the wider world. Geddes and Mumford lacked adequate ways of measuring and analysing these impacts, but today there are methods to assess both regional and global circulations and impacts that derive from the city.

Constantinople, or Istanbul as it is known today, is a good example of a conurbation in the Geddes/Mumford tradition: a large city with many inhabitants, with several old concentrations of population and urban activities, and with significant areas of green space and productive lands within and near the city that contribute to the city's history of adaptation and growth. In this chapter Constantinople/Istanbul is our main case study. As an example of long-term urban sustainability and resilience it has a number of interesting features. Most importantly, it is a very old city that combines a variety of time scales –annual, decadal, centennial and millennial – and for all of these there is a reasonably good availability of sources. To follow a city over such a long period makes it possible to analyse both its ups and downs, especially in relation to crises and processes of recovery and renewal.

The study is intended as an attempt to bring historical evidence into the science of modern sustainability and explore the potential usefulness of resilience as a conceptual tool in understanding urban change over long historical time scales. It does so by re-interpreting and synthesising archaeological data and historical documents alongside recent research on ecosystem services, resilience and socio-ecological metabolism. Furthermore we are interested to learn whether the history of Istanbul and its surroundings can help us understand how we can create more sustainable urban landscapes and cope with crises in the future. Or, in more general terms: what lessons from urban pasts can be learned when planning for urban sustainability?

Historical overview

Istanbul is a city that links Europe, with its long-standing cultural and technological traditions, with the East and the Arab world. The present city has in less than 100 years grown into an enormous metropolis, and at the same time it has many of the same features as small and medium-sized cities of today. Despite its size it has a manageable geography. It once represented the largest foothold on the coast of the wide Byzantine Empire and the Ottoman Empire and its hinterlands. That situation still exists for present-day Turkey. It is also situated near a part of the world where gardens were developed very early on, such as Egypt and Mesopotamia. The garden has been a decorative element and a source of recreation and shelter in hot climates, but it has also served as a site of production and as a buffer for the needs that could arrive unexpectedly in a crisis.

The Byzantine Empire, also known as the East Roman Empire, has until recently often been seen as a faint shadow of the earlier more “glorious” Roman

Empire. Much can be debated concerning the ability of its rulers and how the empire shrank into nothing but a town, existing at the mercy of the Ottomans and dependent on Italian city states. However, the empire and its capital demonstrated an amazing ability to survive numerous periods of crisis. Except for a brief period in the 13th century, owing to the conquest by the Fourth Crusade in AD 1204, Constantinople remained the empire's urban centre. In contrast to many other important cities in antiquity and the medieval period, it never lost its role and position despite periods of decline and regression. It was the capital of the East Roman Empire for more than a thousand years and subsequently became the capital of the Ottoman Empire.

The predecessor of Constantinople, Byzantium (the present name Istanbul was adopted fairly recently, in 1929), is said to have been founded in the seventh century BC.¹⁵ Its strategic importance but exposed location is attested to as early as the Greek-Persian wars, when the Persian garrison in the city was defeated in 478 BC.¹⁶ By then Byzantium was one among many Greek colonies distributed along the Mediterranean coast. Though a significant town, it did not distinguish itself like Athens, Sparta, or Thebes. When Emperor Constantine in the 4th century AD chose a capital for the eastern empire, there were many other cities far larger and more important than Byzantium. However, for whatever reason it was selected, it appears to have been a good choice: today it is the cultural and economic centre of Turkey, has about 15 million people, and is one of the 25 largest cities in the world.

The city is strategically located at one of the narrowest parts of the Bosphorus Straits. The climate is temperate with year-round rainfall, but with seasonal variation. In ancient times the river *Lycos* ran through the town. It gave a steady supply of water but was neither sufficient nor of acceptable quality, and a number of rulers invested in leading water from the mountains via several aqueducts and storing it in a system of reservoirs.¹⁷ (Plate 1) Despite these efforts freshwater supplies were often deficient during the hot summer season, occasionally resulting in civic unrest.¹⁸

The area surrounding Constantinople was to a large degree a valley landscape with soils of varied fertility. The immediate hinterland was obviously not sufficient for providing everything necessary for the large city. However, the landscape was far from poor and provided important resources. The coastal location of the city was also extremely important; the sea provided maritime resources and the strategic-communicative placement made the city an advantageous communication and transport node. Byzantium was surrounded by water to the north, east and south, and easy to defend. By controlling the seas its navy was able to repel invaders on a number of occasions, and to secure an inflow of supplies during times of crisis. Even in the final siege by the Ottomans in 1453, a Genoese grain ship managed to run through the naval blockade.¹⁹ The migration routes of bonito, tuna and other high-quality fish species passed between the Mediterranean and the Black Sea. The rich maritime resources are reflected in the name the *Golden Horn*, which was given to the place to mark its importance as a fishing ground.²⁰

15 Başaran 2008, 11.

16 Souza *et al.* 2004, 96.

17 Crow 2008.

18 Croke 2005, 68.

19 Nicolle *et al.* 2007, 220.

20 Başaran 2008, 16; Wilson 2006, 136.

Plate 1. The famous fresh water basilica cistern now known as Yerebatan Sarnıç was constructed in Constantinople by Justinian some time after AD 532. Photo by John Ljungkvist.



One of the most important traits of Constantinople is its ability to survive as a major centre in this part of the Mediterranean and Black Sea through periods of trauma and social crises. The Greek colony was often plundered or in the possession of the Persians or Thracians, or involved in different conflicts between powerful factions throughout antiquity. The population of the city has since gone through periodic cycles of 'boom and bust' and its physical size has changed markedly over time. Yet it always seems to have had the ability to bounce back after crises. Using a theoretical framework combining the central concepts of ecosystem services²¹ and urban metabolism,²² this section and the following explore the reasons for Constantinople's ability to persist, while at the same time acknowledging that the full range of possible reasons may be beyond our reach. The location of the city and its significance as an economic, religious and administrative centre made it a multifaceted and complex place. What we intend to focus on below is how people managed to support themselves with life-supporting ecosystem services during periods of extreme stress.

Theoretical framework: Metabolic flows of ecosystem services

Ecosystem services are the full range of flows society obtains from life-supporting ecosystems,²³ including provisioning services (e.g. crops, drinking water, and fiber), regulating services (e.g. pollination, air- and water filtration), cultural services (e.g. spiritual enrichment, human health and aesthetic experiences), and supporting services (e.g. soil formation and biodiversity) which are necessary for the production of all other ecosystem services.²⁴

21 MA 2005.

22 Wolman 1965; Decker *et al.* 2000; Kennedy *et al.* 2007.

23 Daily, 1997.

24 MA 2005.

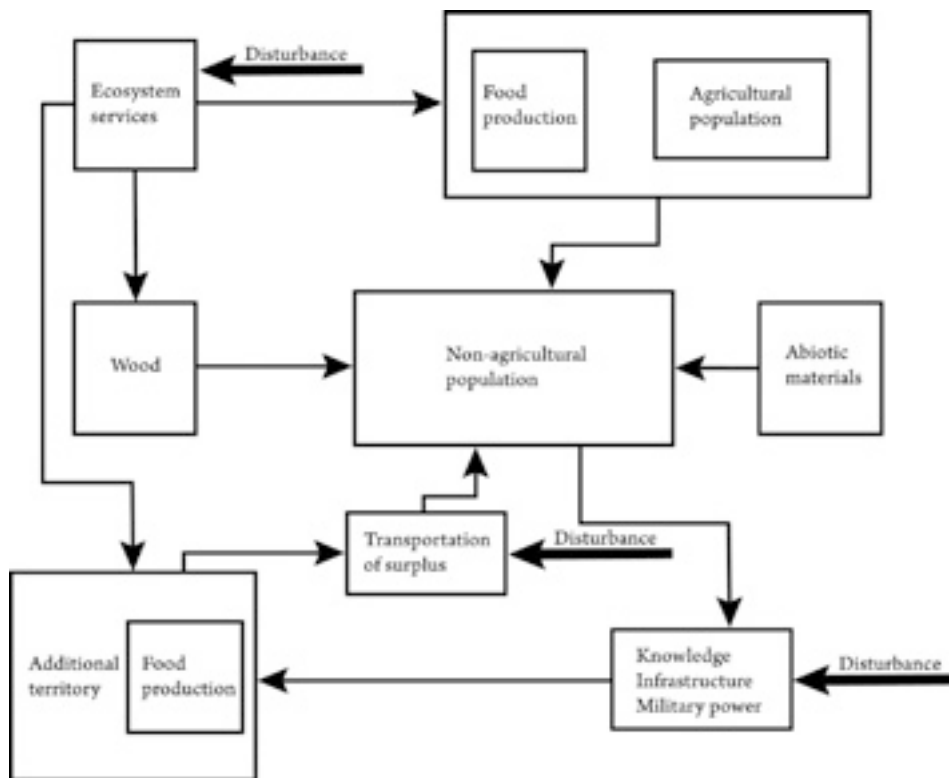


Fig. 1. Simplified illustration of urban metabolic flows (modified from Krausmann *et al.* 2008).

Of the various ecosystem services, we will focus here on metabolic flows of crops and drinking water consumed by the inhabitants of Constantinople. In relation to the supply of crops, there is a range of complex and interlinked ecosystem services that regulate them; for instance generating and managing fertile soils, pollination, pest regulation and nutrient recycling, as well as the ability of people to retain and transmit knowledge related to these aspects.²⁵ But crop production within the city is rarely sufficient to support its inhabitants. Thus a city needs to import food from additional territories (see Fig. 1). In order to secure the imports, food transport infrastructure and military protection are needed. The production and consumption of urban ecosystem services are dependent on such social-ecological networks of relations. Complexity theory shows that disruption in one part of such networks is likely to cause changes in other parts of the same network.²⁶ Hence, a sustainable metabolic flow of desirable ecosystem services, such as crops, depends on the social-ecological system as a whole and its ability to cope with disturbance.²⁷

The concept of socio-economic metabolism has been developed in analogy to the biological notion of metabolism.²⁸ It describes the physical exchange processes (i.e. material and energy flows) between human societies and their life-

25 Millennium Ecosystem Assessment 2005; Barthel *et al.* 2010.

26 Norberg & Cummings 2008; Ernstson *et al.*, in press.

27 Berkes *et al.* 2003.

28 E.g. Baccini & Brunner 1991; Fischer-Kowalski & Haberl 1998; Krausmann & Haberl 2002.

supporting ecosystems as well as internal material and energy flows of human societies.²⁹

There are a number of tools available for analysing the environmental and sustainability impacts of social activities.³⁰ For studying the socio-economic metabolism, material flow analysis (MFA) and energy flow analysis are useful.³¹ For energy analysis, as well, there are a number of different approaches using different system boundaries and energy measures. For example, Energy Flow Accounting (EFA) has been developed to measure energy flows using the same system boundaries and concepts as MFA.³² Defining the ecological footprint is yet another method developed for analysing resources used by a city, with focus on required space.³³ It measures the area used by a system, including the area that could be used for assimilating emissions.³⁴

Economy-wide material flow analysis, of which ecosystem services are a part, studies the inputs and outputs of a society. Much of the work has focused on nations,³⁵ and guidelines have been developed.³⁶ Also other systems, such as cities, can be studied using material flow analysis.³⁷

There are clear connections between material flow analysis and the ecosystem services discussed above. Material flow analysis includes some ecosystem services such as food and wood, but not others such as pollination of crops and water purification, although these are necessary for the production of the flows. On the other hand material flow analysis includes flows of abiotic materials such as metals and fossil fuels, which are not considered as ecosystem services although these flows can also be described as products from ecosystems if geological time scales are considered.

The material flow analysis defines a system with system boundaries and studies the flows across these boundaries. It is based on mass balance accounting and the basic formula is:

$$\text{In} + \text{Produced} = \text{Out} + \text{Accumulated}$$

Besides the flows across the system boundary this approach also takes production and accumulation within the system into account. The Domestic Material Consumption (DMC) is defined as domestically extracted materials plus imports minus exports.³⁸ Examples of extracted materials are wood, agricultural products such as cereals and fodder for animals, and ores and minerals. Water is treated separately.³⁹

29 E.g. Baccini & Brunner 1991; Fischer-Kowalski & Haberl 1998; Krausmann & Haberl 2002.

30 Finnveden & Moberg 2005; Ness *et al.* 2007.

31 Bringezu *et al.* 1997.

32 Haberl 2001.

33 Folke *et al.* 1997; Collins *et al.* 2006.

34 Wackernagel & Rees 1996.

35 E.g. Carlsson *et al.* 2008; Hashimoto *et al.* 2008; Kovanda & Hak 2008; Krausmann *et al.* 2008; Matthews *et al.* 2000; Palm & Jonsson 2003; Russi *et al.* 2008; Schandl & Scultz 2002.

36 Eurostat 2009.

37 E.g. Barles, 2009; Kennedy *et al.* 2007.

38 Eurostat 2009; Matthews *et al.* 2000.

39 Eurostat 2009; Matthews *et al.* 2000

Table 1. Characteristics of different socio-metabolic regimes.⁴⁰

	Total domestic material consumption (tons/capita and year)	Typical flows (tons/capita and year)
Hunter-gatherer regime	1	Food and wood
Agrarian regime	4	Vegetarian food (0.5) Fodder (2.7) Wood (0.8)
City in the agrarian regime	3–4	Food (0.7) Wood (2) Ores (<0.01) Building materials (0.5–1)
Industrial regime	20	Biomass (5) Fossil fuels (5) Minerals, metals, etc (10)

Socio-ecological regimes represent society-nature interactions and are characterized by typical patterns of material and energy flows, called metabolic profiles,⁴¹ which suggests that the evolution of coupled socio-ecological systems can be characterized by a sequence of relatively stable configurations of socio-ecological eras of humanity and rapid transitions between such eras. This configuration aligns with the traditional macro-historical division into three eras: hunter-gatherers, agrarian societies, and industrial society.⁴² A further differentiation can be made concerning cities during agrarian time periods.⁴³ The materials used by these different types of societies are described in Table 1.

The data in Table 1 should be regarded as indicative and they are based on a number of assumptions. For example, the data for an agrarian city is likely to differ in different regions. Here it is assumed that the city in the agrarian regime has very limited agriculture within the city. Building materials differ during the different regimes. In the industrial regime they consist mainly of minerals and metals but also wood. In the agrarian regime they are mostly wood and other organic materials. Obviously the amount of wood used would change depending on the availability of timber. Also the amount of building materials would change depending on whether it was a time of growth or decline, or if the city was located in a warm or cold climate. For a city in an agrarian regime during a decline, the inflow of building materials may be close to zero as materials could be recycled. The data in Table 1 for a city in the agrarian regime is based on data for an Austrian 18th-century city.⁴⁴ For Constantinople these data may be significantly different and also variable during the history of the city. But at the same time, metabolic flows of historical Constantinople at any time would have been significantly different from flows during the industrial or hunter-gatherer regime. For more recent time periods it can be noted that the Domestic Material Consumption per capita is lower for a city than for a nation, illustrating the

40 Fischer-Kowalski & Haberl 1998; Fischer-Kowalski *et al.* 2004; Krausmann *et al.* 2008.

41 Krausmann *et al.* 2008; Haberl *et al.* 2009.

42 Fischer-Kowalski & Haberl 1998; Haberl *et al.* 2009.

43 Fischer-Kowalski *et al.* 2004.

44 Fischer-Kowalski *et al.* 2004.

cities' dependency on the surroundings for material inflows.⁴⁵ Figure 1 is used to describe in a simplified way some of the material flows and dependencies for a non-agricultural population (i.e. people not engaged in agriculture) in a city in an agrarian society.

As indicated in Figure 1, the non-agricultural population needs food, wood and abiotic materials. For food, the non-agricultural population is dependent on the surplus that the agricultural population is willing or forced to deliver to the non-agricultural population.⁴⁶ Depending on the size of the non-agricultural population, they can develop knowledge (including art), infrastructure and military power. The agricultural population can be close to the city or even within the city. Food can also come from additional territories. In order to acquire food from additional territories, military power is needed, either to force the population in the additional territories to deliver food, or to secure the transportation in the case of trade. Food production is dependent on the ecosystem services as described above. The system described in Figure 1 is open to disturbances. The ecosystem services may be disturbed by, for example, climate changes affecting the food production and thus the surplus that can be delivered to the non-agricultural population. Also, the military power may be disturbed by other military powers. If so, transportation of food from other areas will be disturbed, and this will affect urban consumption.

Table 2 Selected model results for scenarios for transportation of food in an agrarian society.⁴⁷

	Small city, normal productivity	Large city, normal productivity	Large city, low productivity
City population	20000	100000	100000
Food export rate (%)	12	11	2
Total food demand in city (TJ/year)	91	455	455
Domestic material consumption (tons/ year and capita)	2.8	2.9	3.6
Average transportation distance (km/haul)	5.8	11.2	39.1
Mass moved (ton km/year and capita)	28	55	217
Share of labour force (%)	8	15	55
Rural population	135000	727000	5838000
Rural population for feed for transportation	17000	136000	2934000

⁴⁵ Barles 2009.

⁴⁶ Krausmann *et al.* 2008.

⁴⁷ Fischer-Kowalski *et al.* 2004.

Transportation is an essential aspect of urban metabolism and may be a significant limitation, as shown by Fischer-Kowalski *et al.* using a simple model for a city in an agrarian society.⁴⁸ Their model included only food and land transport, for which animals were used. The latter in turn also need fodder, which has to be produced by the agrarian population. In the model by Fischer-Kowalski and colleagues, food for people is assumed to come from a circular hinterland and is transported to the city. Some of the results of their model for three assumed cities in an agricultural regime are presented in Table 2. These models represent a small city, a larger city with assumed normal agricultural productivity making an export rate of 11 % feasible, and a larger city with a lower agricultural productivity (only 2 % export rate).

Table 2 illustrates how the total food demand in the city increases with the population, but that the transport requirements of similarly sized cities depend on the food export rate from the surrounding territories. Although the material consumption increases only slightly, the transportation distances increase with increased city population and decreased productivity and thus the mass moved increases significantly. The share of the labour force in the city working with transportation also increases significantly, and the rural population required for supporting the city with food and transportation of food increases dramatically. The results for a larger city with a low agricultural productivity are hardly realistic. This indicates that, in order to have larger cities in an agricultural society, both a high agricultural productivity and efficient transportation are required. The latter can be obtained, for example, by keeping food production within the city. Examples can include city gardens and fishing. Sea transports can be efficient as well. However, they will also often require transportation to and from the ships, and naturally also food and materials for the ships.

The discussion in this section has illustrated that cities are dependent on ecosystem services and material flows in terms of food, crops and other products. The discussion on metabolism for cities during agrarian regimes illustrated that, in order to have large cities, both efficient agriculture and efficient transportation systems are required. In the next section we will discuss how this can be illustrated by the history of Constantinople. We will also illustrate how disturbances affected material flows and how Constantinople could manage despite these disturbances.

Urban demography, changing economies and challenges

The long-term demographic history of Constantinople represents a series of dramatic shifts. It is hardly surprising that a city with such a long history has experienced a number of turbulent periods. The variations in, for example, population and economy are nonetheless interesting as we can link them to general changes and crises in the Byzantine state and society. Despite all the changes, it has always remained the capital of the area and never been abandoned.

As mentioned above, the earliest town *Byzantium* was one of several former Greek colonies along the east Mediterranean coast that Constantine chose from

48 Fischer-Kowalski *et al.* 2004.

when establishing a new capital in AD 324. In the new role as capital the urban population most likely rose dramatically, and it has been estimated that in the late 4th century the inhabitants numbered more than 200000. At the peak of the Byzantine Empire, before the Justinian plague in AD 542 sharply reduced population numbers by 40 %, it totaled perhaps 500000. In subsequent centuries the population varied considerably, characterized by boom and bust cycles. Around 750, after a severe 7th-century decline which included the loss of the Levantine and African provinces (see below), the population had spiraled down to around 40000.⁴⁹ The empire had a revival between the 9th and 12th centuries, with a strong increase in population. After the Crusades and the fall of Constantinople in 1204, the city and the empire never recovered to its former might. With the new Ottoman rulers in 1453, however, came a revival of the city.⁵⁰ Population estimates for greater Istanbul in the 18th century vary between 400000 and 1000000.⁵¹

In comparison with Rome, which reached a population of between 750000 and 2000000 people in the two first centuries AD, Constantinople was significantly smaller. In the 4th century, when the Western Empire began to crumble, Rome still housed some 700000–900000 people.⁵² Constantinople was nevertheless still very large, and together with Alexandria it was one of the dominating cities in this part of the Mediterranean (and the Black Sea) region. Similarly to the situation in Rome, urban sustenance was dependent on the import of grain, primarily from Egypt and other parts of North Africa, as illustrated in Figure 1. In contrast to our own time in which the transport system, owing to the availability of fossil fuels, is considered almost faultless, the maintenance of food supplies to Constantinople was vulnerable to a series of different threats. The bulk trade had to be made by ship, and this was often difficult owing to the nature of the winds in the Eastern Mediterranean. The voyage to Egypt or North Africa was quite easy.⁵³ However, catching winds for the voyage back north was much harder and the supply system was thus both irregular and insecure. In addition there was always a risk of low water levels in the Nile, which resulted in low productivity and famine in both Egypt and the regions it supplied with foodstuffs. This is an illustration of the dependency of ecosystem services and the possible disturbances of these as described in Figure 1.

A lack of grain support was thus dangerous for the economy of the empire and the welfare of the population, and was a cause for social unrest. The rulers realized these problems and tried to minimize them to some extent. One action was to build an additional harbour on the island of Tenedos (some 300 km from Constantinople) and ship the supplies into the city after having reloaded the cargo into smaller vessels.⁵⁴

49 Mango 2002, 69.

50 Mango 2002, 69.

51 Başaran 2007, 58.

52 Lançon 2001, 14.

53 Laiou & Morrisson 2007, 13ff.

54 Başaran 2008, 20.

Crisis in the 7th century AD

In the 7th century the economic situation for the capital changed dramatically, and thereafter we encounter a different empire.⁵⁵ The Avars from the Asian steppes invaded central Europe and in combination with Slavic-speaking tribes conquered several western provinces of the empire. In the East, a long war with the Sassanid Empire was followed by Muslim invasions in the eastern and southern parts of the Mediterranean. As a consequence, the empire lost huge tax and resource areas: it could no longer count on a regular inflow of foodstuffs from Egypt and other North African provinces. The role of these areas was to some degree equivalent to the life support to many countries today that comes from the grain production in, for example, USA and Canada.⁵⁶ It is also illustrated in Figure 1 where the reduced military power made it impossible to secure food transports, thus threatening the non-agricultural population which subsequently shrank. Constantinople never regained the Levantine and North African provinces. In the 12th century, it managed to supply a city with a population of about 400000 with large amounts of grain from Thrace and Thessaly. In addition food was cultivated within the city walls. In this period there was no state-governed grain supply as before the 7th-century recession. The city in this period was divided into *oikoi*, or households, ranging in size and including those of the lesser nobility, the monasteries and the imperial palace. The *oikoi*, whether imperial institutions or private social groups, were consumers, but they were also exploiters of estates. The estates, some of which lay far away, were used to support the houses in the city, and an eventual surplus could be sold on the markets. The state seems to have controlled substantial parts of, for example, the land-owning system. The production of food, however, was to a high degree self-sufficient in the sense that the *oikoi* managed their own food supply and in some cases even maintained large stores of grain.⁵⁷ The system was in short partly decentralized, but it may have been more efficient than the previous, state-governed grain supply.

In the decades after the loss of the African provinces in the 7th century, the population of Constantinople dropped, and the economy, urban structure and administration changed considerably. This process had already begun in the previous century, but now it accelerated.⁵⁸ The loss of the provinces also had a number of potential consequences for the city besides the reduced inflow of foodstuffs and taxes. One example of a resource-rich area was the Eastern Desert of Egypt, which served as a vast mining area for metals, gem stones, and building materials. The Red Sea functioned as the seaborne gateway to the Indian Ocean. A loss of these areas entailed an economical backlash. And everyone in Constantinople involved in the trade, transport and logistic system, even the specialists working with the Egyptian gemstones, were affected.

From a metabolic perspective it is interesting to note how the size of the population interacts with the transport distances, the logistic systems, phases of expansion and stagnation respectively, and the construction of labour-demanding objects such as monuments, palaces, churches, aqueducts and reservoirs, harbours and fortifications. The official monuments and fortifications of the city have been

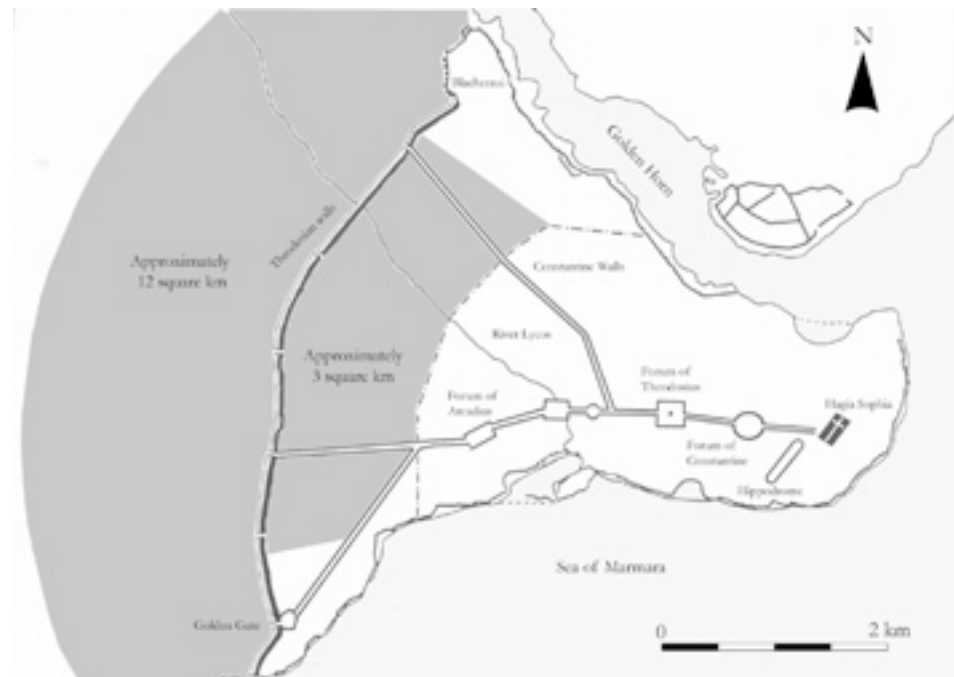
55 Haldon 1990.

56 Halweil 2007.

57 Magdalino 1995.

58 Haldon 1990.

Fig. 2. Agricultural zones in Constantinople. Based on map by Koder (1995).



well documented for a long time;⁵⁹ thorough studies have recently been published on the water supplies,⁶⁰ and new results are forthcoming from harbour excavations in the Yenikapi project.⁶¹ After the establishment of the city as a capital in the 4th century AD, the population increased, and the harbours were made larger and new ones were built. New city walls were built, and the city's new status was eventually symbolized by such monuments as the Hippodrome and Hagia Sophia,⁶² see also Fig. 2.

This 4th to 6th century expansion phase included a web of construction projects dependent on economic trends and political stability. Some projects, such as the royal palaces, were perhaps motivated by an emperor's personal ambition or a need to display the power of either the ruler himself or the empire. Investments in the infrastructure were on the other hand clearly made as a response to an increasing population, the demand for an increased inflow of resources, and the need to protect the city against a growing threat from enemies in both the east and the west.

In the mid-6th century, during the reign of Justinian, the East Roman Empire was at its peak. At this time the population of the capital reached its maximum. There is well-attested evidence for the location of official buildings, roads, harbours and major churches. More important for this study, however, is the overall settlement structure with the location of the residential areas. Unfortunately there seems to be comparatively little evidence to shed light on the location and density of the main residential sectors within the city walls. Since the 6th-century population was many times higher than that of the 15th century, we can assume a very different settlement structure from what is depicted in the earliest engravings of Buondelmonte and others. An important consequence is that the proportion of green space in the city during this period is unknown. We do not know the degree to which urban agriculture and gardening had to stand aside in favour of built-up areas. However, the broad belt of land between the Constantinian and Theodosian walls always seems

59 Freely *et al.* 2004.

60 Crow *et al.* 2008.

61 Kocabaş 2008.

62 Freely *et al.* 2004.

to have been comparatively sparsely populated compared to the eastern sector and the coastline. This was the primary area used for producing food.⁶³

The grand empire of Justinian did not last very long as the military campaigns and huge investments in architectural ventures resulted in an overburdened economy and society. This became evident during the last years of the emperor's reign. Plague and the semi-collapse of the empire left deep traces in Constantinople, and subsequent wars with neighbouring states challenged the power and identity of the city and the empire itself.

For Constantinople, the regression of the late 6th to 8th centuries had major consequences for the city and its inhabitants. Its population dropped quickly and the investments in monumental architecture were soon limited to the maintenance of many expensive but necessary constructions such as the aqueducts and city walls. Inhabitants involved in the transport of grain from Africa and other transports of goods no longer had the same role in society. Artisans could no longer be employed in major building projects, and people related to these persons such as family members, landlords, food suppliers, administrators and others were also affected. In addition to the economic changes, the city was under siege by the Avars and Sassanids in AD 626 followed by Arab sieges in 674 and 714. These were major challenges for transports of food to the city from surrounding regions. As one scholar has put it, "Dark Age Constantinople was ruin, its urban space invaded by orchards and cemeteries, its old public buildings abandoned or converted to artisanal activity".⁶⁴

For the shrinking city the material flows could be reduced significantly. Building materials were recycled from constructions that no one bothered to maintain. There was therefore no need of a similarly complex transport system. Food imports were reduced as well. Transportation to the city could thus be decreased to a large extent, and there were fewer non-agricultural people needing support from the farming community. The decline in population was thus not only an economic recession, but also a response to a reduced need to feed a non-productive part of the population and to maintain and govern a huge transportation system. Still, even after these changes the city was very large compared to others around the Eastern Mediterranean and the Black Sea. There was still a need for significant amounts of resources to be imported to support the centre of the empire.

Constantinople in the 8th century was only a fragment of its former size. From now on the inhabitants seem to have lived in dispersed communities which were almost towns of their own within the city walls, separated by open areas and placed primarily along the major roads and the coast. Open spaces are found especially in the western part of the town, away from the official areas of the town and the harbour areas. After the turbulent 7th century, Constantinople had a significant proportion of green space, between clusters of settlements, all enclosed by huge defensive walls. A source-critical factor that should be considered is that apparently very few excavations of profane settlements in present-day Istanbul have been carried out. Accordingly we cannot satisfactorily relate the literary sources to the archaeological evidence.

Table 3 summarizes the demographic shifts, challenges, building constructions and transports during the history of Constantinople. Table 4 summarizes some attested periods of serious stress to the city.

63 Koder 1995.

64 Mango 2002, 70.

Table 3. Demographic shifts, challenges, building constructions and transports during the history of Constantinople, from the 4th to 14th centuries AD.

Date	Population	Period	Scale of construction	Transports
4 th century	200000	A new capital in growth	Large	Bulk trade ships
Early 6 th century	500000	The centre of the Roman Empire	Large	Bulk trade ships
Mid-6 th century	40000?	An empire under stress. African and Levantine provinces are lost	Only maintenance of existing monuments	Regression in size of ships, no state-organized bulk transports, mostly trade
9 th century	200000	Expanding empire	Medium	A greater amount of land and coastal/river traffic compared to previous period
13 th century		Conquered by the Venetians	Small	
14 th century	40000	Under constant siege	Small	

Table 4. Some attested periods of sieges and serious stress to Constantinople (see also Nicolle *et al.* 2007, 6ff.).

Date	Event
542	The Justinian plague, up to 40% reduction of population
609	Usurper Nicetas takes control of Alexandria and probably the grain transports
619	The Sassanids take Egypt
626	The Avars and Sassanids besiege the town
642	The Arabs conquer Egypt
674–678	First Arab siege
714	Second Arab siege
813	Bulgar siege
860	Siege by the Rus
1047	Usurper LEO Tornices' besieging
1191	Seljuk-Petcheneg siege
1097	First Crusade threatens the city
1204	Fourth Crusade sacks the city
1261	City again under Byzantine control
1394–1402	Under siege by the Turks
1422	Second Turkish siege
1453	Besieged and conquered by Mehmet

The urban agricultural system in Constantinople

Earlier sections of this chapter have discussed the difficulties in feeding a large urban population. This would require both high agricultural productivity as well as efficient transportation systems. The latter in turn required a strong military power to secure transports, which would still be open to disturbances. In the brief historical account of Constantinople we also saw that the city was on a number of occasions under severe stress. Although this led to drastic reductions in population, the city managed to survive as a major centre and capital. How was it possible to feed the population when importing food was difficult or even impossible? One answer may be that the city could produce significant amounts of food within the urban settlement itself. This key aspect of Constantinople's long-term resilience is further explored in this section.

Food production capacity

When discussing the ability of Constantinople to withstand times of crisis in the form of sieges or, more generally speaking, disrupted imports of foodstuffs, one is faced with the question of the city limits. What constitutes a city and how are its immediate and more distant hinterlands determined? Constantinople is perhaps a particularly difficult case as the supplies arrived partly via land routes and partly, and more importantly, by sea.

We have in this case decided to base the discussion on gardening in the city on an article by Koder,⁶⁵ who discussed gardening in Constantinople, including a zone 2 km outside the great wall and areas just across the Bosphorus and the Golden Horn (Plate 2). Fundamental for the production of foodstuffs is access to water, labour, and areas to cultivate. The amount of plant or animal products that thereafter can be produced is related to the local possibilities and management of the land, to the willingness to make investments and to their profitability. As mentioned above, Constantinople has a temperate climate with regular rainfall and also a well-developed water supply system with aqueducts and reservoirs. Within and just outside the city walls, there were open areas that were used for cultivation and keeping livestock. Fish were plentiful in the Bosphorus, especially in the migration seasons.

Landowners and workers

The supply of foodstuffs was a complicated web involving different actors and various organizational structures, from household gardening and animal husbandry to the management of large parks and regular vineyards. Among actors, landowners and land users were key groups.

Turning to urban gardening within the walls of Constantinople and in a zone just outside these, the arable land, which consisted of gardens, fields and perhaps pasture, can be divided between at least four groups of owners:

65 Koder 1995.



Plate 2. Urban gardening in Istanbul. Trees and orchards in the old moat of the Theodosian wall, next to the Golden Gate. Photo by John Ljungkvist.

1. The emperor and the nobility.
2. Monasteries.
3. Land owned by institutions or land-owning farmers.
4. Household gardens/plots managed by citizens of different groups.

Probably we can find all different kinds of land users whether they cultivated their own land or worked for an organization, the Church, or wealthy landowners. They could be everything from monks and garden-interested noblemen to laymen, land-owning farmers and kitchen gardeners. We can in this discussion also include people involved in the supply of fertilizer and livestock. Collectors of human waste and rubbish, as well as major horse stables and the pigs and other livestock suitable for towns, were all essential for supplying the gardens with fertilizer. The abundant supply of nutrients produced by the non-agrarian population in the town, as well as by their animals, at least potentially made the gardens of Constantinople very productive compared to rural villages.

A major proportion of the cultivated land in Constantinople was owned by the emperor and state, by the strong nobility, and by the monasteries.⁶⁶ These categories of landowners probably owned most parts of the open spaces within the city walls, and thus regulated what could be cultivated. As Necipoğlu shows in a case study of the siege by Bayezid I (1392–1402) the arable lands within or just outside the city walls yielded high prices especially during periods of stress.⁶⁷ This strongly speaks in favour of the assumption that church institutions and the wealthy nobility were the main owners of land, as they had better opportunities to buy out small landholders and maintain nearby farmlands to support their *oikoi*. In an age of no refrigerators, good farmlands close to the cities were probably of very high value. On the other hand there are indications that, for

⁶⁶ Frankopan 2009.

⁶⁷ Necipoğlu 1995, 160–161.

example, the patriarch encouraged any person to cultivate as much soil as possible in times of stress.⁶⁸ Through this “mechanism of sharing” landowners and institutions such as the Church gained in prestige at the same time as risks were more equitably shared among different social groups. In practice this meant that ordinary people could till and hold land, which reasonably would have increased the likelihood of their survival in the city. Research on community-based resource management has found similar examples of such sharing arrangements in various societies around the world.⁶⁹ The common denominator seems to be that such sharing serves as an insurance mechanism and a support for the collective actions of communities.⁷⁰

Gardens and fields

An example of how the management of land for gardening might have been organized in Constantinople comes from a description of land owned by a monastery near Thessaloniki.⁷¹ The land holdings of the monastery outside the city were leased to and managed by a family of the nobility, who supplied the monastery with vegetables. The noble family in turn leased plots to private gardeners of civil society. The monastery also owned land in different villages, where plots were leased to individual families living in those areas. This description is evidence of a quite complex, but also varied, way of managing land, involving both large- and small-scale cultivators.

Throughout history the cultivation of land by the nobility has often been related to pleasure gardens and parks. In the Byzantine world, however, pleasure gardens seem to have been partially replaced by the functional vegetable gardens managed for household needs, often in the form of kitchen gardens.⁷² When this transformation occurred is uncertain, but it seems to be a post-Roman phenomenon that also can be seen in the medieval gardens of Western Europe as depicted in illuminated manuscripts. From the later Byzantine period of the 13th to 15th centuries there are detailed descriptions of Byzantine gardens,⁷³ which coincide with troubled periods when rural areas were plundered by enemies of the city. The imperial gardens were intended to be beautiful installations, but with functional elements. A poem describes how a couple moves about in a garden filled with ornamental plants, apple, pear and citrus trees, as well as vineyards.⁷⁴ Constantinides makes an important statement that the East Romans inherited the classical appreciation of gardens and that it was considered an honor to maintain small pleasure and/or kitchen gardens. This “management system” lasted at least until 1453 but seems also to have been maintained under Ottoman rule. There are records of a row of vegetable gardens, grape fields, orchards, and other cultivated lands during the 14th and 15th centuries. This is a time when the city was periodically under blockade by the Ottomans and food shortage was a constant threat. The ability to withstand a siege or a shortage of food for other reasons was dependent on interaction between the state/rulers and the inhabitants. It de-

68 Necipoğlu 1995, 165–166.

69 Berkes & Folke 1998.

70 Ostrom 2008.

71 Constantinides 2002, 89–90.

72 Constantinides 2002, 87.

73 Constantinides 2002.

74 Constantinides 2001, 96.

pended on the administration's ability to supply water and store grain, but there was also a need for self-sufficiency among the producers, in the form of gardens, urban crop production, and keeping livestock like pigs and poultry, inside as well as outside the city walls.

The productivity of above all gardening, livestock keeping and fishing is essential for our interpretations of how well the city could cope in times of stress. The eight-year long siege and blockade by Bayezid I at the end of the 14th century was one of the greatest challenges to the city as these actions succeeded in cutting off the city from both land and sea. According to Necipoğlu⁷⁵ it was a grave situation for the inhabitants, and many people migrated or starved. Land and food prices rose dramatically and many people suffered from lack of sustenance. The affluent could buy expensive, smuggled food while the poor suffered severe hardships. Despite these difficulties the siege did not succeed; the city was not starved into submission as intended. One important factor seems to have been the cultivation of vegetables within the city walls. Koder⁷⁶ argues that Constantinople was more or less self-sufficient of vegetables, even in periods with a population peak such as the early 6th and 12th centuries. Some proteins could probably also come from fish and livestock fit for urban conditions.⁷⁷ People went hungry but were nonetheless able to stay alive, largely thanks to the food produced within and perhaps just outside the walls.

In the beginning of this section we noted that feeding a large city was difficult. Yet it seems that Constantinople was able to survive because it could produce significant amounts of food within the city limits. Within the city walls, or just outside, fertile land and adequate fertilizer were available for cultivation, and there was also a management system that could support the use and distribution of the land.

Conclusion

As noted above, Byzantium has long been considered as a weak follower of the classical Roman Empire. However, it showed a remarkable resilience in that it survived such a long time in spite of repeated warfare and power struggles over territory. The history of Constantinople is that of a city which in size and structure has changed markedly during thousands of years. The structure of the city in its early medieval heydays has in many respects a close resemblance to modern towns. It had a large population, and many of the inhabitants were involved in maintaining a complex administrative and transport system. Especially during its population peaks it was highly dependent on a very large catchment area for food and raw materials. This was a costly burden due to all the investments necessary to feed and support the city. But it was also essential for transforming it into a metropolis and powerful symbol. When the trade and supply routes were blocked, or the catchment area decreased, the situation was grave for the city and the empire. In its Byzantine periods, the city had two peaks in size and economic welfare as reflected in the building of public monuments and churches. One of these peaks was, of course, before the plague and the wars after Justinian. The

⁷⁵ Koder 1995.

⁷⁶ Koder 1995.

⁷⁷ Dagron 1995.

other peak, beginning in the late 8th century, saw an increase in population and church construction which coincided with a territorial expansion of the supply area. A modern metropolis like Singapore does not necessarily dominate a large territory because the market economy and fossil fuel transports lessen the need for it. When the territory of Constantinople shrank, so, too, did its population (see the metabolism model above). Nevertheless the city managed to survive.

One important reason for this resilience was the military capacity to withstand aggression. The geographical conditions were favourable, but especially important for the survival of the city itself was the fact that land was reserved for food production inside the city walls. In times of siege, or other periods of stress when imports of food and other materials were interrupted, there were possibilities to produce alternative sources of food as a response mechanism to being besieged, which thus strengthened urban resilience to withstand societal perturbations.

This chapter has focused on the resilience of Constantinople by analysing metabolic flows of ecosystem services. We have used theories of social-ecological resilience when searching for sources of resilience. Our discussion contributes to the theory development based on institutional theory, the theory of collective action,⁷⁸ and to social-ecological systems thinking with a focus on small-scale self-sufficient rural societies.⁷⁹ However, small-scale self-sufficient rural societies make up only a minor portion of the world population. What is still largely lacking in social-ecological resilience theory is a treatment of cities in general and large urban agglomerations in particular. This includes the historical lessons that can be drawn from urban distant pasts with regard to sustaining ecosystem services in times of hardship and crisis, a point that we ignore today at our own peril.

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⁷⁸ Ostrom 2008.

⁷⁹ Berkes & Folke 1998; Berkes *et al.* 2003.

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15. Innovative Memory and Resilient Cities: Echoes from Ancient Constantinople

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ABSTRACT

This chapter uses insights from resilience thinking in analysing a two-thousand-year period of ancient and modern Constantinople, addressing one of the great challenges of the Urban Anthropocene: how to nurture an ecologically sound urbanisation. One of the lessons is that Constantinople maintained a *diversity of insurance strategies* to a greater degree than many historical and contemporary urban centres. It invested heavily not only in military infrastructure but also in systems for supplying, storing, and producing food and water. From major granaries and at least four harbours the citizens could receive seaborne goods, but during sieges the trade networks broke down. At those times, when supplies ran dry, there were possibilities to cultivate food within the defensive walls and to catch fish in the Golden Horn. Repeated sieges, which occurred on average every fifty years, generated a diversity of social-ecological memories – the means by which the knowledge, experience, and practice of how to manage a local ecosystem were stored and transmitted in a community. These memories existed in multiple groups of society, partly as a response to the collapse of long-distance, seaborne, grain transports from Egypt. Food production and transports were decentralized into a plethora of smaller subsistence communities (*oikoi*), which also sold the surplus to the markets of the city. In this way Constantinople became more self-reliant on regional ecosystems. An additional result was that the defensive walls were moved, not in order to construct more buildings but to increase the proportion of gardens and agricultural land. In a comparison with Cairo, it can be seen that these innovations related to enhanced self-reliance in food production made it possible for

Constantinople to bounce back from extreme hardships, such as extended sieges, without collapsing into chaos or moral decay. Transformed urban morphology of the city would simply remind residents, through the visual presence of a living garden culture, of the importance of the latter for food security. Without the gardens the long intervals between sieges would probably have been enough to dissolve living memory. Hence, the urban resilience of Constantinople was enhanced, promoting well-established old regimes and traditions of importance for producing ecosystem services to society while at the same time testing and refining new and successful regimes, or in other words through the interplay of memory and innovation. Currently, and even more so in decades to come, the mindsets of urban people hold power in a global arena. Questions related to how the loss of green space in metropolitan landscapes will affect worldviews are worrisome since it is the desires and demands of urban people that will affect future decisions and essentially determine the fate of the planet. People throughout the world, and not least in Western societies, need to be constantly reminded of our dependence on a living planet and stay motivated to support it. Social-ecological memories related to local food production have to be nurtured in urban landscapes as well, and an urban morphology is needed that strengthens ecological awareness across urban populations rather than the opposite.

Challenges for the urban Anthropocene and sources of resilience

The previous chapter focused on the resilience of Constantinople by analysing metabolic flows of ecosystem services. We have used insights from resilience thinking¹ when searching for sources that enabled the persistence and development of Constantinople despite regularly occurring disturbances such as sieges, loss of territory for agriculture, and collapsed trade networks. Our discussion contributes to the theory development based on institutional theory² and on social-ecological systems thinking with a focus on small-scale, self-sufficient, rural societies.³ However, societies of this type make up only a minor portion of the world population today. What is still largely lacking in social-ecological resilience theory is a treatment of cities in general and large urban agglomerations in particular. This includes the historical lessons that can be drawn from distant urban pasts in regard to sustaining ecosystem services during times of hardship and crisis.

Currently, with increasing urbanisation we are entering what may be termed the Urban Anthropocene, an era in which up to 66% of the human population will live and work within urban landscapes a development which may have increasing, perhaps ominous or disturbing, environmental impacts.⁴ Unless current trends of urban development are transformed, the actions and desires of urban populations will dominate global material flows, leaving large, destructive footprints on a planetary scale. Urban innovations need to interact reciprocally with the biosphere in order for civilization to operate in safe development trajectories.⁵ Two of the grand challenges of the Urban Anthropocene are therefore 1) to increase understanding of how to mitigate the environmental burdens of cities, and 2) at the same time learn how to build local urban resilience to uncertain global

1 Folke *et al.* 2005; Folke 2006; Walker & Salt 2006.

2 Ostrom 1990.

3 Berkes & Folke 1998; Berkes *et al.* 2003.

4 UN 2009.

5 Rockström *et al.* 2009; Ernstson *et al.* 2010.

futures. This chapter aims mainly to contribute to discussions of the second challenge by exploring insights in the previous chapter, and it attempts to convince the reader that such urban resilience and innovation building must interact positively with the mindsets of urban people and the biosphere as a whole.

Resilience was first developed by systems ecologists as the ability of a system to maintain its structure and function after disturbance, or as “the capacity to lead a continued existence by incorporating change”.⁶ The perspective focuses on the short periods of disturbances and crises, and possible bifurcation points (tipping points) where systems evolve into alternative trajectories. This line of research includes thinking about how to remain in desirable trajectories as well as how to evoke transitions from undesirable ones.⁷ It thus requires understanding of historical trajectories of structural change emerging from localized interactions in complex adaptive systems,⁸ and how experiences of such change are stored, interpreted and used. Resilience thinking, including multiple non-linear processes involved in a city’s historical development, hence provides a different basis for theoretical explorations.

Resilience thinking, and indeed historical common sense, teaches us that any system is prone to surprise. Multiple case studies show that the most prominent resilience principle is *diversity*. It is the diversity of complex social-ecological relations and features that underpins the production of ecosystem services, and that bolsters self-organization, recombination and innovative capacity in relation to disturbance.⁹ Since humans form part of social-ecological systems, the diversity of urban minds (or mindscapes) and how they connect is equally important for resilience. All the more since it is the habits of the mind that govern the diversity of social practices, and the methods and places for food production, and that consequently form part of the potential success of any attempt to navigate change of urban metabolism in relation to disturbance.

These reflections can also be brought to bear on the Constantinople story, which is one of diversity and change and of a flexibility of the urban mind. A number of factors helped Constantinople to withstand its challenges, in particular sieges that undermined trade networks of ecosystem services. Constantinople maintained a *diversity of insurance strategies* to a greater degree than many contemporary urban centres or agglomerations. From a military defence perspective it was surrounded by water from all sides but one, and opponents with no major naval power were forced to face the impressive Antonine walls. The Byzantine fleet in itself was for a long time very capable. It both dominated the sea and was able to maintain supplies through some enemy blockades. The rulers of the city invested heavily not only in military infrastructure but also in systems for supplying and storing food and water. Water from the aqueducts was stored in a series of reservoirs that were built reusing components of previous buildings. From major granaries and at least four harbours the citizens could receive seaborne goods. And very important was that when sieges were efficient and supplies ran dry, there were also possibilities to cultivate food within the Antonine walls and catch fish in the Golden Horn. Hence Constantinople had a variety of options to sustain the city with food. These options were maintained institutionally and defended in times of crisis as well as times of prosperity.

6 Holling 1973; 1986.

7 Walker & Salt 2006; Rockström *et al.* 2009.

8 Levin 1998.

9 Berkes *et al.* 2003; Ostrom 2008; Scheffer & Westley 2007.

Knowledge and values concerning resilience building were stored in multiple groups of society, partly as a response to repeated food shortages and disturbed urban metabolism. There was a clear shift in the management of food supply compared to the situation before and after the 7th-century crisis when the empire lost many of its provinces. The huge 6th-century city was heavily dependent on long-distance traffic with large ships, transporting grain from Egypt to the heart of the empire. This complicated industry, in many ways an early mirror of the present-day global transport system, was thoroughly governed by the state. The crisis, related to the loss of productive farmland and trade networks, did not change the dominant modes of government since the economic decisions in the city were mainly made by the state. Decisions related to food production and transports were, however, decentralized. As a self-organized response, *oikoi* (houses/social communities) from this point on owned, rented, and managed farmland in, close and far away from the city.¹⁰ They produced for themselves and sold the surplus to the markets of the city. In this way Constantinople became more self-reliant on regional ecosystems. The society of the city was no longer greatly dependent on large-scale imports from distant landscapes, managed by the state. Urban metabolism thus changed in character, and simultaneously knowledge and practices concerning food production diversified into a plethora of *oikoi* in Constantinople. It was now in the interest of many diverse self-organized communities to steward their land in a way that could give them long-term returns and a surplus that could be sold in the food markets of the city. This innovation increased resilience in the flow of ecosystem services related to agriculture and gardening. The memory of past crises thus led to new and innovative ways of providing food to the inhabitants.

This shows that another key (complementing diversity) to sustained resilience in social-ecological systems is the ability to store, and possibly transform, insights over time and use them under new circumstances. This relates to the mindscapes of people, and we refer to it as the memory-innovation dialectic. We do not know exactly how and when knowledge of past metabolic regimes and adaptive strategies in cities survives and is passed on to later generations. However, historical and sociological research has demonstrated that social memory is maintained in communities, in particular in nations but also in cities, professional groups and religions.¹¹ Halbwachs' work shows how experiences are kept alive through transmission between innovative periods.¹² He argues that even though it is only individuals that remember *sensu stricto*, individual memory processes derive from social interaction and are facilitated by supra individual means shared with others including language, symbols, rituals, monuments and landscapes.¹³ Accordingly, social groups construct their own images of the world through agreed upon versions of the past – versions constructed through negotiation, not private remembrance.

¹⁰ Magdalino 1995.

¹¹ Halbwachs 1950 [1926]; Connerton 1989; Miształ 2003.

¹² Coser 1992.

¹³ Miształ 2003.

Urban gardens as pockets for social-ecological memory

Research suggests that urban cultivation and other nature-related practices affect urban dwellers' mindsets, particularly those related to values, practical knowledge and stored experiences.¹⁴ We focus here explicitly on social-ecological memory to capture the resilience dimension. Social-ecological memory is a special subcategory of social memory, here used as the means by which knowledge, experience and practice of how to manage a local ecosystem and its services is retained in a community, and revived and transmitted over time.¹⁵ It is, of course, dependent on circumstance and context, and it may be perfectly maladaptive to the environment, contain all sorts of ills for society, and may also block transformation by causing inertia. However, social-ecological memory captures vital relations between social groups and living ecosystems that affect the ability of people to respond to disturbance in the urban metabolism of ecosystem services. Social-ecological memory that carries knowledge and ecological practices is a reflection of the interactions of the communities of practice¹⁶ in a dialectical relationship with the physical places in which the practices are performed.¹⁷ For instance, successful responses to crises have been argued to be retained in particular collectives of urban gardeners.

Modern urban history teaches us that urban gardens have been sources of local resilience during periods of crisis. For example, during the First World War allotment gardens played a crucial part in supplying city dwellers in Britain with vegetables; the number of allotment gardens surged from 600000 to 1500000. By 1918 allotment gardens had provided 2000000 tons of vegetables.¹⁸ Allotment gardens were planted in parks and sports fields, and even at Buckingham Palace the earth was tilled to grow vegetables as part of the *Every Man a Gardener Campaign*.¹⁹ After the war the number of allotments declined abruptly. The Second World War sparked a new explosion in the number of allotment gardens, very similar to the campaign of the previous war. Such boom and bust cycles of urban allotment gardening in relation to the world wars provided relief to people in urban areas all over the Western world.²⁰ A recent example of urban gardens as sources of resilience is found on Cuba. The US blockade in combination with the later collapse of the Soviet Union caused a catastrophic shortfall in food availability, especially among urban populations. Ten years after the collapse of the Soviet Union, 400 horticulture collectives were found in Havana alone, annually producing 8500 tons of vegetables, 7.5 million eggs and 3650 tons using fossil-fuel-independent organic farming practices.²¹ These practices have not turned Havana into a rich city, but simply helped it to respond to blockades and collapsed trade networks.²²

Social-ecological memories that carry experiences such as those stored from

14 Miller 2005; McDaniel & Alley 2005; Andersson *et al.* 2007; Barthel *et al.* 2010.

15 Barthel *et al.* 2010.

16 Wenger 1998.

17 Barthel *et al.* 2010.

18 House of Commons 1998.

19 Crouch & Ward 1988; House of Commons 1998.

20 Basset 1979; Gröning 1996; <http://www.koloni.org/pdf/01.pdf>.

21 Altieri *et al.* 1999.

22 Barthel *et al.* 2011.

the world wars are critical subsets of any social-ecological system, providing sources of resilience to deal with ecological disturbances to metropolitan landscapes. Metaphorically, social-ecological memory is akin to a library, with a building, staff, lenders and organization, in which ecological knowledge and practical advice for management are reflected in how it is built, structured and organized by the people engaged in the library and in the contents of the books, with new books continuously added.

Social-ecological memory is also related to 'ecological memory', which is a concept developed in systems ecology with links to resilience thinking²³ but which has repercussions in broader traditions of research on memory within psychology and other disciplines.²⁴ It has also been broadened in discussions of environmental history and ecocritical literature.²⁵ In a city there are numerous and varied communities, and associated social memories, on different levels of society.²⁶ Specialized communities and organizations that carry knowledge and practices are developed, for instance, among urban farmers working closely in a community, among monks in the monasteries, among bureaucrats, architects and others.

Currently in metropolitan landscapes, social-ecological memory is fragile and vague compared to the powerful forces of daily demands, desires, and impressions. In that sense the urban mind is a constantly changing mix of the long waves of influence through social-ecological memory and the higher frequencies on which other values rest, for example those connected with industry, marketing and mass consumption, and thereby the contemporary urban metabolism. In this context, eroded diversity of urban minds has direct bearing on resilience, since mindsets may also be maladaptive if they are totally decoupled from local and regional environmental dynamics.²⁷ Maladaptive social memories may lead to jeopardy, since individuals have a tendency to lock into one of several interpretations of reality, and to the same behaviour as peers in communities. Historically this has led to increased rigidity and to clinging to maladaptive habits of mind as a response to crises, reducing chances for innovative change and survival.²⁸

Social-ecological memory in this respect should not be confused with individual or collective memory. It should rather be understood as relations – among individuals, their communities and physical objects – that carry place-specific experiences and knowledge. The carriers are physical features of the urban environment that perform resilient memory work and the communities of people that manage those features, including their interaction in urban-nature practices, institutions, rituals and narratives. Together the urban physical environment and the diversity of social memories and narratives shape the urban mind. As indicated above, modern examples of such physical 'memory workers' include small-scale urban gardens, which tend to serve as living libraries for the transmission of information about local climate, soils, and moisture regimes as well as about changing populations of pollinators and pest-regulating birds.²⁹ It seems that living ecosystems support social-ecological memory, and that such memories could

23 Bengtsson *et al.* 2003.

24 Neisser & Winograd 1988.

25 Buell 2009.

26 Wenger 1998.

27 McGovern 1994; Holling & Meffe 1996.

28 Scheffer & Westley 2007.

29 Crumley 2002; Barthel 2008.

easily dissolve from the urban mind if urban ecosystems are removed from metropolitan landscapes. Without these structures and processes social memory has nothing to work on, except through media like art and literature. Carriers of practical knowledge and place-specific experiences dissolve.

The question arises as to whether oral tradition in isolated farming communities can continue to exist over very long periods in urban contexts. The sad truth is probably that it can not, which is why the physical green areas, the external literature and the citywide institutions were so important in Constantinople. For instance, landscape features, institutions and organizations store practices and knowledge much better than individuals do, partly via negotiations about rules, what has been called institutional memory.³⁰ It has been argued³¹ that Aldo Leopold's classic *A Sand County Almanac* (1949) has served to remind the American mind about the collective relationship of humans with the land, and that this helps explain its enormous success over more than half a century. Related interdisciplinary research shows that documented narratives, or 'protective stories' articulated by grassroots civic ecology movements, determine success or failure when influencing the broader urban mind in matters of ecosystem conservation.³²

Research shows that landscape features, monuments and urban morphology are important mnemonic devices for people and organizations.³³ Monasteries, urban gardens, parks, and other physical structures serve as reminders of alternative uses of urban space and as opportunities to protect and foster ecosystems and public health services. If urban green spaces are transformed into brown or grey spaces such social-ecological memories may dissolve from the urban mind. The mind itself may not be enough, but the mind can more readily sustain resilient ideas if the urban fabric favours mnemonic devices that help urban people remember their dependence on living ecosystems. Institutions, narratives and gardens also need nurturing and management but they can outlive individuals many times over.

Mind-resilience dialectic

The gardening culture of Constantinople was part of a continuum of social memory going back to its foundation.³⁴ Analysing the resilience of Constantinople clearly shows that its garden infrastructure in the urban landscape played a vital role for its persistence, which is in line with research on ecological memory that revolves around dialectical relationships between physical landscape features and renewal of ecosystem processes.³⁵ As part of the complex urban fabric of Constantinople, the green infrastructure served the city well for a long time precisely because it functioned as a vehicle for a social-ecological memory that retained certain subsistence competencies, thus lowering vulnerability, but at the same time allowed for diversity in problem-solving mechanisms in the plethora of *oikoi* that would support such memory. Drawing on the notion that acquisition of so-

30 Walsh 1991.

31 E.g. Crumley 2007.

32 Ernstson & Sörlin 2009.

33 Miztal 2003; Schama 1995.

34 Cf. Crumley 1994; Bellwood 2005.

35 E.g. Bengtsson *et al.* 2003.

cial memory typically follows crises,³⁶ and that the average time between sieges was about 50 years, it is reasonable to assume that between the periods of siege the practice, knowledge and experience related to local crop production were retained in the urban mind of the city, carried on in its gardens and *oikoi*.

In order to preserve the social-ecological memory related to urban food production in the dominant mode of the urban mind of Constantinople, there may have been times when there was a need to actively transform the mindsets among its bureaucrats. Decentralizing agriculture into *oikoi* in tandem with constructing a 'green infrastructure' by moving the city wall can be interpreted as urban innovations that enabled garden- and food-production memories to expand in the overall urban mind. Such changes in the morphology of the city would simply remind residents, by visual presence and by garden culture, of their importance for food security during sieges. Without those physical gardens and communities the 50-year intervals between sieges would probably have been enough to dissolve living memory. Hence, resilience might be enhanced by the interplay of relevant memory and innovation, or in other words by promoting well-established old regimes and traditions of importance for producing goods to society while at the same time testing and refining new and successful regimes.

Hence, this chapter implicitly argues that the human mind and memory do not evolve in isolation, *sensu Descartes*, but co-evolve via our senses, with changes in the physical Earth. Transformation of the physical landscape of Constantinople possibly enabled one sort of social-ecological memory to expand in the dominant mode of the urban mind. We find it highly probable that awareness of the importance of locally produced crops, as well as agricultural skills, enabled the city to preserve a green infrastructure within the city walls, which was important for adapting to external stressors. This was a more important contribution to the urban mind than the beautiful buildings, monuments and artefacts of Constantinople. Owing to the presence of gardens and urban farms and the people that were engaged in them, city inhabitants were simply better prepared mentally to respond to sudden drops in food imports. Hence, large-scale innovations of the system (decentralization into *oikoi* and changing the urban morphology of Constantinople) were necessary to conserve social-ecological memories of food production at a diversity of local scales of the urban landscape, a dynamic that corresponds to the notion of panarchy of nested scales in complex adaptive systems.³⁷

All lines of business, organizations and families develop their own social practices and shared histories, and hence social memories.³⁸ In order for the city to develop into trajectories of local resilience, social-ecological memories had to be nurtured, and other social memories transformed into directed innovative lines of thought that strengthened ecological processes across urban space rather than undermined them. The carriers of knowledge and practices of Constantinople's garden communities were probably, like in garden communities today, strongly influenced by the physical properties of their city, but people were of course also constrained and informed by literature and laws in combination with oral traditions, community rituals and mimicking of behaviour of peers.³⁹

Important to illuminate is the fact that Constantinople had a literate society that inherited written experiences of agriculture and gardening dating back to

36 Folke *et al.* 2003; Berkes & Turner 2006; cf. Schwartz & Nichols 2006.

37 Gunderson & Holling 2002.

38 Misztal 2003.

39 Nazarea 2006; Barthel *et al.* 2010.

antiquity. Monasteries and to some degree the state apparatus were organizations that legitimized themselves by using old traditions and knowledge. The agricultural compilation *Geoponika* was assembled in the 9th century, but was based on previous works dating all the way back to the Hellenistic period.⁴⁰ It functioned as a memory-carrier of agricultural practices and knowledge of subjects as diverse as celestial and terrestrial *omina*, viticulture, oleoculture, apiculture, veterinary medicine, the construction of fishponds, the use of donkeys and monkeys, and much more. A diversity of such memories could then be used in debates on how to prepare for potentially uncertain futures. Hence such social-ecological memories of how to grow food in Constantinople were always in place and could 'kick in' when needed.

Concluding discussion

Are there lessons for research and practice to be harnessed from a study of this kind? The Urban Anthropocene affects ecosystems both in and around cities. Urbanisation is strong and homogenous on a global scale and causes rapid and persistent landscape transformations,⁴¹ and it pushes food production further away from urban food consumption.⁴² Hence, *urban people* globally increasingly rely on long-distance trade networks of food, affecting all ecosystems of the biosphere.⁴³ Especially challenging is the erosion of biodiversity related to industrialized agriculture.⁴⁴ Aggressive agri-business and food chains based on highly prescriptive sets of relations supply cities with food,⁴⁵ resulting in standardization, simplified ecosystems, and eroded soils in those support systems.⁴⁶ The radical industrialization of food production, which has a rich social and cultural history of its own,⁴⁷ accelerated after the Second World War and has been the dominant mode of food production the last 60 years, a brief period indeed when compared to the history of Constantinople.

Urban mindscapes hold power in the global market arena. Loss of green space in metropolitan landscapes and hence erosion of experiences of the ecological foundation of food production, currently witnessed in cities, is worrisome in this context since the desires and demands of urban people affect the food industry.⁴⁸ Urban development thus has responsibility for directed innovations that enable lived experiences of ecosystems close to where people reside, so that people constantly will be reminded of our dependence on a living planet and stay motivated to support it.

Concerns are being raised as to how cities today would respond to shocks to metabolic flows, disturbances in long-distance trade, as well as shocks related to loss of biodiversity, climate change, and peak oil scenarios.⁴⁹ This is a major

40 *Geoponika*.

41 Cox 2005; Lee & Webster 2006.

42 Steel 2010; Berg 2009.

43 Deutsch 2005; Engström *et al.* 2007; Barthel 2008; Ernstson *et al.* 2010.

44 Maffi & Woodley 2010.

45 Deutsch 2005; Murdoch 2006; Steel 2010.

46 Benton *et al.* 2003; Antrop 2005; Negri 2005; Maffi & Woodley 2010.

47 Belasco & Horowitz 2009.

48 Miller 2005; Steel 2010.

49 E.g. Steel 2010.

critique of the version of modernization that has prevailed during the Anthropocene, not just as fact but also as ideal. Only about half a century ago urbanisation in its traditional form – with cars, high-rise buildings, asphalt, and without agriculture, animals, and food production – was regarded as an integrated, if not inevitable, part of modernization⁵⁰ and as the epitome of human achievement, humanity's take-off into an urbanised 'mass consumption society'.⁵¹

As we enter the Urban Anthropocene it seems obvious that new versions of modernization are emerging where the impact of urban growth will be addressed and mitigated. During the Anthropocene there have clearly been elements of urban thought that will contribute to this turnaround of the urban mind in years and decades to come. We have mentioned, as examples, urban designs and theory by Patrick Geddes and his American disciple Lewis Mumford.⁵² But there are of course many others, and there is a host of new literature emerging on precisely these issues, ranging from the level of the individual building⁵³ to the level of the entire city or city region.⁵⁴

This study suggests that the simplistic ideals of modernization may be maladaptive in the long run, and that we should progressively discuss the 'ecologizing' of society⁵⁵ and integrate diversity, insurance capacity, and social-ecological memory in the urban fabric, just as ancient Constantinople did. The old tiresome discussion about progressive or conservative ideologies must cease. Simplified solutions based on ideologies about *only* development or *only* conservation should be scrutinized with regard to each particular case, issue and cultural-ecological context. In Constantinople it was the interplay between social memories and innovation that made resilience building possible. Innovations grew out of experiences related to problem solving of water and food issues. One successful innovation in this regard was the redesigning of the urban morphology for enabling urban agriculture inside the city walls. That increased the amount of productive green space within the city borders. Interestingly, this finding directly communicates with trends in urban planning such as 'smart growth or compact cities'. However, research on how such trends affect local resilience, biodiversity, and the biosphere is unfortunately lacking.

Dramatic drops in prosperity and population were witnessed in Constantinople when long-distance trade broke down. But Constantinople was able to bounce back thanks to decentralization into local and regional food production by farming communities (*oikoi*) within and around the city and by the incorporation of more green space within the Antonine walls. Stored in a diversity of community skills was the knowledge of how to steward local agriculture and gardens in relation to place-specific ecosystem dynamics. Echoes from ancient Constantinople serve as critique of current piecemeal solutions for urban sustainability that aim to mitigate carbon emissions by trends such as 'smart growth', whilst tacitly dissolving ideas about liveability, ecosystem services and capacity for local food production. Even if it is crucial to come to grips with the run-away climate change, this study shows that such urban development will decrease the possibilities for self-sustenance and cause future landscapes of vulnerability. More

50 Eisenstadt 1966.

51 Rostow 1960.

52 Luccarelli 1995.

53 E.g. Anker 2010.

54 E.g. Davis 1998; Newman, Beatley & Boyer 2009.

55 Murdoch 2006.

holistic approaches are needed. There is too little discussion of how metropolitan landscapes can build insurance capacity in relation to breakdowns in the long-distance trade of food. Lessons from this study therefore encourage development of post-modern thinking about metropolitan landscapes, and integrate resilience thinking when creating utopias for the Urban Anthropocene.

A self-reflexive insight for science related to our approach of using the deep past as a laboratory for future ideas is that reflexion on central concepts will arise. This is assumed to be a good thing. Constantinople may be considered a resilient city despite its cycles of boom and bust in populations, since it maintained its identity as a central node and powerhouse in the Eastern Mediterranean and the Black Sea region. But what is urban resilience really? Is it meaningful to discuss urban resilience and leave out issues related to ethics and morality? For instance, can it be said that Stalingrad was a resilient city, despite the horrors that went on during the battle in the Second World War? A contrasting contemporary example to Constantinople is the history of Cairo. Hassan⁵⁶ correlates climatic fluctuations, the flooding of the Nile, and the written records of Cairo. While the city persisted, it went through deep crises of starvation and sharp drops in the urban population when the Nile did not fertilize its shores or when the climate was erratic. Even if the city of Cairo, the name and the physical place, persisted through those periods of horror it is repugnant to call it a resilient city because human values that we cherish were sometimes betrayed. During the worst periods of starvation 'urban innovations' saved the day as human corpses were sold in the market places of Cairo.⁵⁷ Thus cannibalism was institutionalized and all barriers for, from our cultural point of view, acceptable human behaviour were overshot. Should we cite this as an example of successful adaptation and use Cairo as an example of urban resilience? The question raises the wider issue of whether resilience is a value-free concept, just as 'fitness' is in evolutionary theory.

When we translate concepts such as resilience and adaptation from the natural to the social world, for example as we look for better solutions for contemporary societies, it seems inevitable that we must subordinate them to some concept concerning the fundamental values of humanity. There is no doubt that violence and killing were also present in Constantinople during times of starvation or when there were disturbances in the flow of ecosystem services like drinking water. For instance, there are records of people getting killed in fights over diminishing supplies of drinking water.⁵⁸ However, those acts were against the law and described as something out of the ordinary. Nonetheless, there is nothing that guarantees the existence of decency and human values under conditions here described as resilient. On the other hand, there is no guarantee of decency and human values under non-resilient conditions either. If anything, we would assume the risks of betrayal of human values to be at greater peril if urban life is riddled by weak resilience and high levels of vulnerability. We would welcome more empirical research on urban history from this perspective. Meanwhile, we would propose as a matter of principle that urban resilience should be more than for the city (name, place and physical space) to simply persist. If social-ecological resilience is to be defensible as a societal goal, human values and ethics must be included. Moreover, arguing for urban resilience in isolation, or for the resilience of networks of cities, without taking into account the environmental burdens of

56 Hassan 1994.

57 Hassan 1994.

58 Croke 2005, 68.

cities on the biosphere will be a repetition of the ills produced by the ideology of modernization.

This interest in urban resilience and innovation reflects a necessary change in direction. It is in this exciting and necessary intellectual design and political endeavour that we are putting forth the urban environmental histories of cities like Constantinople, not as templates, because history never repeats itself except as tragedy or farce, but as resources of ideas, wisdom, and indeed also grave mistakes. Our core message from having revisited the resilience history of Constantinople during more than two millennia is that the keeping of green space for tacit co-production of ecosystem services and the maintenance of civic capacities for food production and community-based relationships to land and water have been essential properties for long-term survival and success. These lessons echo through the present, into the future, since two thirds of the population is projected to live in cities. Schools of innovation, architecture, construction and urban planning, and other mindscapes that will dominate urban development must be 'ecologized' if sustainable development is to have any iota of meaning.

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16. What's in a Name?

Mistra – The Town.

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Mistra (or **Mystras**) is a fortified medieval town on the slopes of Mount Taygetos in Laconia (Lacedamonia), near ancient Sparta (Fig. 1).¹ In 1205 AD it became the seat of the Latin Principality of Achaea that was established after the conquest of Constantinople during the Fourth Crusade. The strong castle, built in 1249 on the top of the rocky hill, was, according to the *Chronicle of Morea*, the most beautiful in the Peloponnese (Plate 1).²

By the late 13th century, people started to move from the unprotected plain of Lacedamonia, where the ancient city of Sparta had been located, up the slope to settle within the protection of the castle.³ This was a period of conflict and wars



Plate 1. View of Mistra.
Courtesy of Ingela Nilsson.

1 I am most grateful to Dr Ewa Balicka-Witakowska for illustrations and to Prof. Ingela Nilsson for reading and correcting my text. Any remaining mistakes are all mine. For a recent important publication of the architecture and monuments of Mistra, see Sinos (ed.) 2009.

2 Runciman 1980; Shawcross 2009, Sinos, (ed.) 2009, 11–22.

3 Herrin 2007, 291; Sinos (ed.) 2009, 11–18.

Fig. 1. Mistra and Monemvasia, map of Greece.



between the Latins and the Byzantines, but in 1348, Mistra became the capital of the Byzantine Despotate of the Morea. It was ruled by relatives of the emperor of Constantinople until its fall to the Ottomans in 1460.⁴

The history of Morea is a continuous fight against foreign invaders, but Mistra – although small in size – flourished as a rich and cosmopolitan city, for instance with a Jewish community engaged in textile production. A prosperous agriculture on the slopes and in the neighbouring fertile plain was an important economic base for the city, and far-reaching trade attracted merchants from many areas (Plate 2). It was also a city of Hellenic and Byzantine culture and learning,⁵ characterized by splendid architecture and frescoes of monasteries and churches.⁶

Around the castle grew a city (Fig. 2). A road separated the town into two areas: to the north were the palaces and large houses of the élite, while the smaller houses of the citizens were built to the south. Similar to other strongholds established by the Latin conquerors, it housed troops and other personnel needed to establish and maintain authority. They brought their families, making up an élite that identified themselves as French.⁷ By the end of the 13th century, the town had grown outside the fortification walls. This new part of the town outside the gates, now known as the gate of Mistra, is called the Kato Chora or Messo Chora (Middle City). A second fortification wall enclosed these new buildings. The quarters inside the inner walls with William II's Palace of the Despots were called the Pano Chora (Upper City) (Plate 3).

However, the prosperity of the town eventually meant that the walled area once again became too small and crowded, and a third group of buildings, the Exo Chora ("land which is outside", Lower City), was built outside this second wall.

More than 40 churches and monasteries were eventually erected within the walls (Plate 4). Among all the monumental religious complexes, the Monastery of Brontocheion may be mentioned – the wealthiest monastery with two churches,

4 Herrin 2007, 290; Sinos (ed.) 2009, 11–18.

5 With the Neoplatonist philosopher George Gemistos Plethon (1355–1452) as a prime example, Herrin 2007, 293–298.

6 Herrin 2007, 291.

7 Shawcross 2009, 8.



Plate 3. The ruins of medieval Mistra. Courtesy of Ingela Nilsson.



Plate 4. One of the over 40 churches in Mistra. Courtesy of Ingela Nilsson.



built between 1290 and 1310. In the Kato Chora, the church of Agios Theodoros from 1296 dominates. The churches are well known for their wall paintings, which are of great importance for the study of Byzantine art (Plates 5–9). Together with other buildings, churches and monasteries, it attests to the skill of the craftsmen and painters of the time. It is also the religious architecture, and most especially the wall paintings of the churches that have attracted most scholarly interest, along with the town's place in the history of medieval Greece.⁸ The liv-

⁸ E.g. Talbot Rice 1968; Browning 1980. For the churches, see also Marinou 2009.



Plate 5. Peribleptos church. The nativity of Jesus; c. 1370. Courtesy of Ewa Balicka Witakowska



Plate 6. Afendikó church, north chapel. Gathering of the Martyrs; beginning of 14th century. Courtesy of Ewa Balicka-Witakowska.



Plate 7. The Metropol church. Hetimasia, "The empty throne". Courtesy of Hjalmar Torp.



Plate 8. The Pantassa church. The entry into Jerusalem. Courtesy of Hjalmar Torp.



Plate 9. Monemvasia seen from the sea. Courtesy of Gullög Nordquist.

ing quarters and the archaeological remains of the ordinary Mistra inhabitants and the town's commercial installations have so far been little studied.⁹

Except for a period of Venetian occupation (1687–1715), Mistra was held by the Ottomans from 1460 until the beginning of the Greek War of Independence in 1821. Mistra took part in the revolution against the Ottoman occupation and suffered during the war of independence. After the liberation, when the young Greek nation was searching for ideological roots in the ancient culture, Mistra was abandoned, and in 1832, the new town of Sparta was built on the plain, close to the original site of Sparta. That site offered easier communications and more room for growth than the rocky slopes at Mistra. The present community of Mystras, close to the medieval city, consists of four groups of houses with some 800 inhabitants in total. In 1952, the site was expropriated by the Greek state and it became a UNESCO World Heritage Site in 1989.¹⁰

Mistra's history is linked with that of Monemvasia, an older town on a small rocky peninsula linked to the mainland by a 200 m long causeway on the eastern shore of southern Peloponnesus (see Fig. 1). Similar to Mistra, it consists of a fortress on top of a rocky hill with an adjacent fortified town on its western slope.¹¹ The fortress contained fields and gardens, a contributing reason for why it withstood the conquering attempts of Arabs and Normans in 1147. But in contrast to Mistra, which was a religious and civil capital with trade as part of the economy, Monemvasia developed into an important trade and maritime centre from the 10th century AD onwards, from which was shipped, among other goods, malvoisie (malmsey), the wine reputedly named after the town's Frankish name, Malvoise. Monemvasia was sold by its ruler, the Despot of Mistra, to the Pope in 1460.¹² The town lost its commercial importance until modern times, when it – to a greater extent than Mistra – became a centre for tourism, owing not so much to its ruins as to the nearby beaches.¹³

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9 Some important houses are discussed by Sinos in Sinos (ed.) 2009, 243–336. For the palaces, see Sinos (ed.) 2009, 337–373.

10 Sinos (ed.) 2009, 18–22.

11 Its foundation has been related to the raid of the Slavs in the late 6th century AD, but other factors, such as a shift of economic activity, may also have played a role. Cameron 1993, 160; Herrin 2007, 92f.; Kalligas 1990.

12 The Pope in 1464 sold it to Venice. Until the Greek independence, Venetians and Ottomans alternated as rulers, Cameron 1993, 160; Herrin 2007. For a discussion in Greek of the town of Monemvasia, see Orlandos 2000.

13 In modern times its most famous inhabitant is the Greek poet Yiannis Ritsos (1909–1990).

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17. The Linguistic Landscape of Istanbul in the Seventeenth Century

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ABSTRACT

This chapter studies the urban linguistic environments of Istanbul after the historical shift brought about by the Ottoman conquest in 1453. The focus is on the seventeenth century, when the population doubled – assumedly because of climate changes in Anatolia – and Turkic-speaking groups became dominant. Nevertheless, the town accommodated a multitude of interacting linguistic codes, that is, languages and dialects, both social and functional varieties. This multilayered linguistic ecological system was mapped out on the topography of one of the largest urban centres of the time. Distinctive features ensuring sustainability of the linguistic codes in this prenational urban setting are outlined. For instance, the absence of normative measures implies that codes were used in complementary functions and no single code was offered or claimed to be used in all domains of communication.

Urban settings call for encounters between speakers of different codes and thereby trigger cross-linguistic communicative habits, such as code copying, that is, copying of elements or features of a model code into the speaker's native variety. As a result of copying, new, levelled varieties arose. An urban variety of spoken Turkish emerged and served as a *lingua franca*. This linguistic landscape of Istanbul ultimately became the bedrock from which modern standard Turkish evolved.

Foreigners in urban settings may act as linguistic mediators. Our knowledge of the linguistic landscape of seventeenth-century Istanbul is based to a high degree on data provided by travellers, interpreters (dragomans), and European Orientalists who wrote so-called transcription texts, texts documenting the spoken codes of Istanbul in non-Arabic scripts, mostly Latin. Some of these mediators and their contributions to the documentation of the linguistic landscape are presented in this chapter.

Introduction

Istanbul as a linguistic landscape

Seventeenth-century Istanbul was one of the largest, if not *the* largest, metropolises of its time, the political, spiritual and cultural centre of the Ottoman Empire, established in the territory of the East Roman Empire. Although this period in the history of the city is abundantly documented, little is known about the complex linguistic situation and the development of the Turkish language in the city.

The linguistic diversity in the urban environment of Istanbul after the historical shift brought about by the Ottoman conquest in 1453 is the subject of this study. The focus will be on the formative period of the 17th century, when the population doubled and Turkic-speaking groups became predominant. Some distinctive features ensuring the viability of the language varieties in this early modern, pre-nationalist, multilingual, urban environment will be presented.

The great complexity of the issues involved demands a careful empirical approach based on painstaking analyses of available linguistic materials. The language of the lower social classes, colloquial speech and minority languages are best mirrored in what has been called 'transcription texts', that is, Turkish texts written in non-Arabic scripts such as Latin, Greek, Armenian, Cyrillic and even Georgian. The authors of the transcription texts were members of minorities, travellers and foreign scholars. By studying these texts, new information can be acquired on the vernaculars spoken in the city.

Linguistic processes

The subject of our study is the complex and multilayered linguistic ecological system in the unique urban landscape of Istanbul. The term 'ecological system' is used here metaphorically to denote a system of codes as they interact in the social and physical environment of the urban space, in other words, in the linguistic landscape. "Just as natural ecologies are seen as structures and are defined by functional interconnections between their inhabitants and their habitats, linguistic diversity is seen as similarly structured, with small languages being important for the viability of larger ones and vice versa."¹ The specific environment regarded as a home for the languages and their variants is in this case the landscape of Istanbul, with its particular urban spatial syntax for cohabiting speech communities and shared or separated spaces for communication.²

The ecological approach is employed in order to gain new insights into the processes taking place in the linguistic ecological system of Istanbul.

Special attention must be paid to the most remarkable result of this interaction – the growth of an urban variety of Turkish which served as a *lingua franca* for the diverse speech communities of Istanbul. This *lingua franca* which during the Ottoman times sheltered the small vernaculars and contributed to their viability would later become the bedrock of modern standard Turkish as developed in the age of the Turkish national movements.

1 Mühlhäusler 2006, 206.

2 See Çınar 2007 on how an 'imagined community' may develop at an urban meeting place in present-day Istanbul. A fascinating example is the subculture in Laleli; see Yüксеker 2007.

One and a half centuries after it became the capital of the Ottoman Empire, Istanbul accommodated a multitude of interacting linguistic codes. The term 'code' will be used here as a general designation for languages, dialects, sociolects, or any kinds of linguistic variants. The 16th and 17th centuries brought about significant changes in this landscape when, possibly owing to climatic changes (see below), new large turcophone groups from Anatolia entered the city. This development may have changed the relations among the speech communities. However, a considerable equilibrium of the codes can be observed. There were code shifts, and even a loss of certain codes; new spoken and written varieties emerged; convergence took place among the codes, but none of the codes can be said to have absolute dominance. There was no 'killer' language, that is to say, a dominant language that grows at the cost of other linguistic codes rather than in addition to them.

Absence of normative measures

The spoken and written codes in Istanbul in this formative period evolved without any official normative measures. This is even true of the prestigious High Ottoman language. The growth and evanescence of the language varieties were regulated by the actual needs and communicative habits of the speech communities. The codes were used in complementary functions, and no single code offered or claimed to be used in all domains of communication.

Language encounters

Encounters between speakers of different languages are a customary facet of urban settings. According to Weber,³ occidental cities have three major distinctive features: they are closed, dense, and large settlements. The most important experiential aspect of city life is, however, the character of landscapes in which population groups without deeper familiarity with each other live relatively close together. Cities are places where contact between strangers, which is otherwise an unusual and often threatening situation, becomes an everyday experience that has a significant impact on all aspects of life.⁴ In Istanbul, the 'meeting of strangers' implied interaction between speakers of a multitude of different linguistic codes and cultures. The macro- and microstructure of everyday life in the urban setting required cross-linguistic communicative habits and created levelled varieties of the codes. The ultimate result of these processes was the development of a Turkish-based *lingua franca*.

Ottoman Turkish

Istanbul was an imperial city. After 1453, the Ottoman conquerors imposed a new socio-cultural edifice on the remnants of the Byzantine city. The new rulers defined their *Hochkultur* as an Islamic-Turkic transformation of the political-cultural role played by the East Roman Empire. A new imperial language, Ottoman Turkish, was created as the pre-eminent medium for expressing the essence of the empire and the aspirations of its dynasty. It was based on Turkic varieties and

3 Weber 1958.

4 Szakolczai 2003, 52.

equipped with numerous copied elements from the unrelated Persian and Arabic languages. It manifested the trans-regional and trans-cultural Islamic rule of the Ottoman dynasty. Ottoman Turkish became the language of the administration of the empire, the expression of its political and cultural power, and the medium of its literary and conceptual production. Ottoman Turkish will be treated in more detail below.

Vernaculars

In the geographical and political space of the city, the speakers of Turkic and the non-Turkic speaking communities – the Greeks, Armenians, Jews, Italians, and others – maintained and transformed their vernaculars in economic and cultural interaction with each other and with the ruling elite.

Interdisciplinary landscape ecology

Linguistic ecological systems

Linguistic ecology studies the relationships and interaction among written and spoken linguistic codes 'living' in a given environment.⁵ Ecolinguistics has gained special relevance today, when the massive death of languages has become a compelling issue.⁶ A better understanding of the sustainability of languages can be gained by studying linguistic ecological systems of urban centres with enduring multilingual populations. Large urban centres are, as a rule, targets of immigration, which reinforces multilingualism. In New York today about eight hundred languages are spoken, many of them already extinct in their original homelands.⁷ Urban landscapes may shelter linguistic diversity.

The task is to describe the links between the codes and their natural, social, and cultural contexts. The crucial questions concern linguistic diversity and heterogeneity: why and how codes are alive, why and how they interact and compete with each other, why and how they vanish and die. The codes are embedded in their environments, which influence the mono- and multilingual speakers interacting within them. The environment is not only social but also includes natural biological and material circumstances. Our definition of linguistic landscapes extends the exclusively social notion of language ecology suggested by Einar Haugen. It is also important to ask how speech communities imagine and conceptualize their landscapes. What role did the urban landscape of Istanbul play in shaping cultural and social identities?

An integrative approach to research on language contact is advocated here. But describing the potentially relevant topographical, historical, cultural, ethno-linguistic and other factors is an arduous task. It may yield good results if approached in a differentiated way, unless, of course, the criteria are mixed up or the factors lumped together. The correlations will be visible only if each factor is considered separately. The necessary integrative analyses cannot be carried out

⁵ Haugen 1972.

⁶ About half of today's six thousand languages may be threatened by extinction within the next 50–100 years.

⁷ Roberts 2010.

by single researchers alone. There is an absolute need for cooperation in a comprehensive project involving linguists, historians, sociologists, anthropologists, demographers, ethnographers, ethnolinguists, geolinguists and other specialists. The linguistic approach and the other approaches will thus complement each other.

The linguistic ecological system of Istanbul

An investigation of the highly complex environment of early modern, cosmopolitan Istanbul may give significant insights into the nature of the urban mind as mirrored in the local linguistic ecological system. In spite of its great complexity, or rather thanks to it, linguistic codes enjoyed high sustainability. The interaction and development of the codes were governed by ecological factors. Local vernaculars were maintained and new varieties developed according to the communicative and cultural needs of the speech communities. The codes interacted with trans-local linguistic and cultural codes “participating – and knowing one was participating – in cultural and political networks that transcended the immediate community”.⁸

Code copying

Human linguistic competence includes mechanisms of copying from and into codes.⁹ In contact situations, speakers of a primary code copy either whole items or only selected phonic, grammatical, or semantic features of a dominating code. They may also copy elements from their primary code into their particular variety of a dominating foreign code. These processes are complex and creative. Code copying always introduces something new, and, as a result, innovative varieties develop. This natural process of code interaction is not always regarded as beneficial. It is sometimes claimed to create mixed, impure, contaminated varieties.

In the case under investigation, 17th-century Istanbul, the communicative habits of the speakers were governed by relatively free code interaction. The freedom to adapt spoken and written codes to the immediate needs of the individuals or speech communities created an ecological system in which the native code-copying skills were not hampered. There was no significant negative stance toward using non-native linguistic elements. Minority speakers, for instance, in the famous shadow plays *Karagöz*, were recognised because of their characteristic accents when speaking Turkish. Thus, there were different substandard varieties of Turkish spoken by the Armenians, Greeks, Jews and other non-turcophone minority groups. We assume that these creative code-copying processes played a positive ecological function in the maintenance of the vitality of the codes.¹⁰

Functional stratification

A relatively high viability of the codes may be owing to their functional stratification. No code arrogated to itself the right to be applied in every function. Various levels of spoken and written Ottoman Turkish had their specific functional

8 Pollock 2006, 10.

9 Johanson 2002.

10 See Ritter's book on the *Karagöz* plays; Ritter 1953.

domains. The non-Muslim communities, organized in so-called *millet*s, had their own written and spoken codes. Even small dominated codes were maintained, since they served specific functions. Some codes had also a geographical anchoring as the language of special speaker groups who lived together in particular districts of the city. High Ottoman Turkish was a written language which did not hamper the use of different spoken varieties of Turkish.

The topography of the city

A brief sketch of the topography of Istanbul will set the stage for presenting the codes in their social, political and physical environment.

Before the Ottoman conquest, the Byzantine city was restricted to the area behind the walls. After the conquest, the surroundings also belonged to the Ottomans. Since no enemy threatened the city, Istanbul could expand into the adjacent co-urban areas. In 1453, the Ottomans took over the centres of Byzantine sovereignty and equipped them with their symbols of supremacy. The main body of the Ottoman army, religious functions, religious schools, and the main functions of urban life, such as the markets, were established within the walls.

The population continued to be heterogeneous, especially as a consequence of Mehmed the Conqueror's repopulation measures. Large numbers of Muslims immigrated from the Balkans after 1453. The majority of the population consisted of Muslims, but also non-Muslims had their settlements in the city. The Greek patriarch was based in Fener, the Armenian patriarch in Kumkapı, and there were large settlements of members of their congregations in their surroundings. Other non-Muslim minorities were the Jews and the Turkish-speaking Orthodox Karamanlids. A Roma community settled in Sulukule, where it has remained up to modern times. Eyüb, to the west of the wall, comprised gardens, pastures, fisheries, slaughterhouses, tanneries, a candle-making industry, etc. Eyüb was also a Muslim religious centre with mosques and medreses. See Figs 1 and 2.

The suburb of Galata, across the Golden Horn, was a former Genoese colony whose population remained more or less intact after the conquest. Non-Muslim immigrants from the provinces and European merchants settled in this suburb. Galata had good connections with the international trade and possessed a market place of its own. The imperial dockyard in Kasımpaşa and the gunnery in Tophane were centres of craftsmanship.

Üsküdar, across the Bosphorus, was an important transit point for international, i.e. Armenian and European, commerce. "From the late sixteenth century on, at any one time, there were at least one hundred discernible groups of artisans and service workers in Istanbul".¹¹

Urban settings also offered abundant opportunities for cross-linguistic communication, for example in market places, baths, public water facilities,¹² and churches. Tradesmen constituted a large part of the urban population. Although trade was dominated by non-Muslims, also Turks participated in it. Similarly, as a rule, the Muslims and non-Muslims entered different guilds, but some guilds were mixed.

¹¹ Yi 2000, 25.

¹² Mantran mentions that, according to Evliya Chelebi's *Seyahatname*, there were in Istanbul in the 17th century 4000 palace fountains, 9995 public and private fountains, 7909 water pipes, and 200 *sebilhane*'s, i.e. buildings where water was distributed free. Mantran 1990, 108.

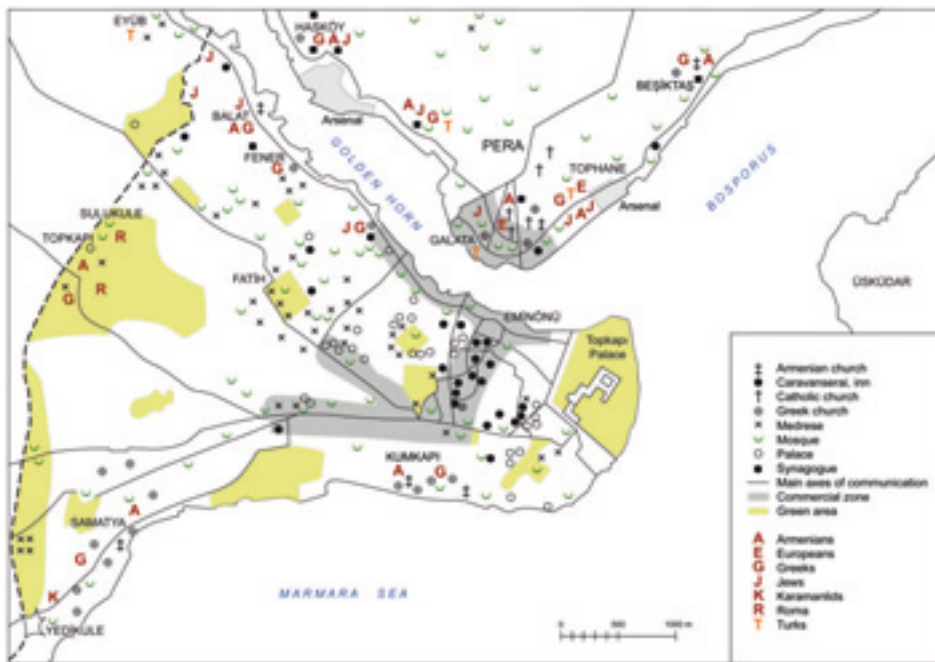


Fig. 1. Areas of cross-linguistic encounters in Istanbul in the 17th century: non-Muslim communities, religious and educational institutions, commercial zones, inns, palaces, main axes of communication and green areas (after Mantran 1962: Maps 4 and 5).



Fig. 2. The composition of the population in the Bosphorus area in the 17th century (after Mantran 1962: Map 8).

The non-Muslim population was organized in *millets*, which were autonomous, self-governing, confessional communities that had their own laws and were headed by their own religious leaders. The latter were responsible to the central Ottoman authorities for paying taxes and maintaining internal security. The communities organized their own communal councils without intervention from outside. Their members conducted their affairs in their own language, except in case of legal problems with Muslims. In the spatial organization of Istanbul, the Turkic and non-Turkic codes had also their own habitats. The fact that minority languages dominated in certain districts of the city was a significant factor for their viability.

A troubled century

The 17th century was a troubled period in Ottoman history. Economic, military, and political problems caused disturbances. Six revolts led to the deposition of three sultans and the assassination of two others. One problem was the rapidly growing population. The growth started at the end of the 16th century and was allegedly a result of population pressure in Anatolia.¹³ In the 17th century the situation became precarious, since the newcomers lacked economic and social networks. Several edicts were issued in order to send them back to the provinces.¹⁴ European travellers wrote about the hardships of life in the city, for example conflagrations due to the densely built wooden houses, and epidemics caused by the humid climate.

Consequences of climate change?

Some historians have seen a possible relationship between climate changes and social crises in Europe. Le Roy Ladurie¹⁵ was the first to study a long-term climatic cooling period, the so-called Little Ice Age that affected Europe between about 1280 and 1850. Griswold¹⁶ discussed a possible correlation between climate change and a long period of social unrest in Anatolia, which led to massive migrations to large cities during the 16th and 17th centuries.

The Jelâli revolts, named after the followers of Sheykh Jelâl, an Alevite leader, broke out in Anatolia in the periods 1526–1528, 1595–1610, 1654–1655, and 1658–59. The longest and most violent revolts in the history of the Ottoman Empire, they were caused by long-term economical problems and had disastrous effects for the Empire. Griswold found evidence in climate data for the hypothesis that a climate change in Anatolia contributed to population pressure and the subsequent migration of Turkish-speaking and Armenian masses to Istanbul.

An intensive debate has been conducted on demographic changes in the Ottoman Empire in the 16th and 17th centuries and the interpretation of the historical data on population size.¹⁷ It is an unresolved issue as to how these events influenced the linguistic situation in Istanbul.

¹³ Cook 1972.

¹⁴ Yi 2000, 26.

¹⁵ Le Roy Ladurie 1971

¹⁶ Griswold 1993.

¹⁷ See, e.g. Özel 2004; İslamoğlu-İnan 1994; Erder 1975.

The codes

Early sources of written Turkish

The study of linguistic varieties in Istanbul is dependent on the availability of written sources. Written sources in Turkish in Anatolia and Rumelia were relatively scarce before 1453. The chieftains of the Turks who entered Anatolia after the victory over the Byzantine Empire at Manzikert in 1071 were literate in Arabic and Persian, if at all. The Seljuks, who established their state in the surroundings of Konya and later extended their hegemony over Anatolia, used Arabic and Persian as their written language for administrative and literary purposes.

Jelaleddin Rumi, who spoke Persian and perhaps also the Eastern Oghuz language Khorasan Turkic, and who acquired knowledge of Anatolian Turkish and even Greek in Konya, wrote his works in Persian. The fact that his Sufi teaching was propagated in Turkish in order to reach Turkish-speaking social groups shows that different linguistic codes were chosen for different purposes.¹⁸

The use of Turkish as a written language started in the 13th and 14th centuries in some small principalities, centres such as Aydın, Balıkesir, Karaman, Kastamonu, Konya, Kütahya, Sivas, and the first Ottoman capitals Bursa and Edirne.¹⁹ The earliest Anatolian literary works were those of Sultan Veled (1291 and 1301), Gülşehrī (1317), ‘Āṣīq paša (*Garib-name*) (1329), and Yunus Emre. Some legal and religious works were translated into Turkish, such as the legal codebook *Manẓumat al-ḥilāfiyyāt* (1332). Translations of commentaries on the Koran into Turkish constitute another type of text.

Arabic-Persian elements

The important Central Asian Turkic literary languages Karakhanid, Khwarezm Turkic, and Chaghatay had begun to copy abundant materials from the prestigious Islamic language New Persian with its numerous elements of Arabic origin.²⁰ Literary New Persian offered a developed vocabulary, other devices of a linguistic order, and aesthetic and stylistic patterns. The normal way of copying Arabic elements was via Persian.

This pattern was followed in written Turkish, particularly in the period that started with the establishment of the Ottoman Empire. High Ottoman, to which only a limited social group had access, was used as the written medium in administration and cultural life. It was based on a Turkish grammatical frame but gradually became overloaded with Arabic-Persian lexical elements symbolizing its high status and validity as the language of the whole empire. Written Arabic and Persian were also still used as languages of scholarship and poetry.

High Ottoman

From the late 15th century onwards the High Ottoman literary language emerged, a formalised code with a set of rhetoric and stylistic rules for prose and poetry. Despite all aesthetic formalism, there was no single standard. The register of

18 Johanson 1993.

19 Björkman 1964.

20 Johanson 1986, 185–186.

prose varied according to the purpose of the text and the author's stylistic ability. Its most prominent elements include nominal phrases of the Persian so-called *izafet* type, combinations of Persian right-branching and Turkish left-branching clauses, and synonyms from all the three languages Arabic, Persian, and Turkish. The aesthetic value of a literary text was correlated with its effect on the addressee. Authors were expected to combine stylistic patterns in a skilful way, whereas the addressees recognized the hints of the metaphors and the rhythmic textual waves,²¹ drawing pleasure from both the known repertoire and innovative usage.²² Formalism is also characteristic of the Ottoman administrative language with its stylistic components, which varied according to the kind of document, its purpose, and the rank of the addressee. Legal documents are relatively restricted in stylistic respect: their language may be elaborate, but there is less emphasis on the quest for originality.²³

The vocabulary gradually evolved to a thoroughly mixed one with an ever-increasing percentage of Arabic-Persian elements. According to certain estimations, it comprised, by the 15th century, about 45 per cent elements of ultimately Arabic origin and 15 per cent of Persian origin.²⁴

Interaction of codes in Ottoman Istanbul

When turcophone groups entered Constantinople in 1453, the cultural, linguistic, and ethnic diversity of the city changed. The previously dominating Greek code was superseded by Turkic varieties. An urban linguistic environment emerged in which various Turkic and non-Turkic codes interacted, serving different functions: to meet the needs of the state, or to be limited to the diverse speech communities.

The Ottoman conquerors took over the multilingual environment of Constantinople without ethnic prejudices. The city, however, continued to be the dominant urban centre of administration and culture. Non-Turkic-speaking groups like the Greeks and Armenians continued to exist in the city and were forcibly settled there in order to repopulate the city after the flight of large numbers of local people and early immigrants shortly after 1453. The latter was due not only to the destruction of parts of Istanbul, but also to a new taxation system for immigrant households introduced by Mehmed II. Later sultans also settled people deported from other regions in Istanbul.

Sociological changes modified the dominance relations of the codes in the urban landscape. Population movements constantly added new codes to the existing ones, and increased or reduced the numbers of certain speaker groups. Immigration from and interaction with East Balkan settlements added more elements to the Turkic linguistic environment.²⁵ Throughout the history of the city, speakers of new varieties moved in from Anatolia, the Balkans, Transcaucasia, and other regions.

21 Tietze 1973, 299.

22 Römer 2005, 318.

23 On stylistic questions in general, see İz 1964; Bombaci 1964; Flemming 1973; Tietze 1973; Römer 2001, 2004; Procházka-Eisl and Römer 2007 18–19. On originality in poetry, see Tolasa 1983, 218.

24 Römer 1981.

25 Hazai 1974; Tietze 1976; İnalçık, EI² IV, 238a.

This process resulted in a very complex multilingual environment with specific interaction patterns. The interacting codes converged as a result of code-copying processes, displaying increasing similarities. The role of non-Turkic minorities in this interaction merits special attention. Their speakers were often multilingual and served as mediators between speakers of Turkish and other languages. Thus, the non-Muslim speech communities also played an important role in the development of Turkish varieties in the city.²⁶

Contributions of minorities

The roles of various minorities will be dealt with below. The largest minorities developed their own written traditions, creating Graeco-Turkish, Armeno-Turkish, and Judeo-Turkish literatures. In the 16th century, Jewish poets wrote hymns in Hebrew after the model of Ottoman songs²⁷ and wrote Turkish in Hebrew script.²⁸ The first literary works in a modern European sense were based on a spoken variety of Turkish and written with Armenian characters. The Karamanlid literature, produced by orthodox Christians, was written in Greek characters. The Judeo-Spanish (Ladino) group cultivated a Romance variety brought to Istanbul and the Balkans by Jews expelled from Spain in 1492.²⁹ The first descriptions and grammars of Ottoman were written by minority members and foreigners. Ottoman scholars were less interested in the cultivation of Turkish as such, but paid more attention to the Arabic and Persian components of written Ottoman. As described below, the so-called transcription texts produced by various mediators are of high value for reconstructing the development of Turkish spoken varieties.

We possess many good sources for the study of the interaction between the different population groups in the 17th century. Accounts written by foreigners who visited Istanbul often give rich information on the ethnical and linguistic diversity of the city.

Population data

The multiethnic and multilingual character of the city is indirectly reflected in population data. In 1478, the population comprised 65000–80000 households, of which 58.11 per cent were Muslim and 41.89 per cent non-Muslim. Around 1550, Cristobal de Villalon, Sinan Pasha's doctor, estimated the population at 410000–520000, consisting of 57.7 per cent Muslims and 42.3 per cent non-Muslims ('infidels'). He reckoned with 60000 Turkish, 40000 Christian, and 4000 Jewish households in the city, and 10000 additional households in the suburbs. More precise data can be extracted from Ottoman registers. There is a fragment of a *tahrir* of 1455 that covers 22 *mahalles* with 918 households, 291 of which had been destroyed. The remaining households were sparsely populated. In 1455, Jewish households were deported from Rumeli to resettle in Istanbul, and between 1459 and 1475 many Greeks, Armenians, Latins, and Muslims settled in the city as a consequence of Mehmed's large-scale deportations (*sürgün*) from

26 For standard and non-standard Turkish varieties, see Johanson 1989.

27 See Tietze and Yahalom 1995.

28 See Tietze 1991a.

29 Ben-Naeh 2008 gives a comprehensive presentation of the history of the Jews in the Ottoman Empire.

other conquered cities. The census of 1477 (Topkapı Sarayı Arşivi D 9524) thus shows a total of 14803 households, comprising 8951 Muslim, 3151 Greek orthodox, 1647 Jewish, 267 Kaffan, and 372 Istanbul Armenian households, plus 384 households of Armenians and Greeks from elsewhere, and 31 Roma households. An additional total of 1521 households of various ethnic groups made up the population of Galata. Later on, voluntary settlement was encouraged, and after 1492 the Ottomans welcomed Jewish settlers from Spain and other Mediterranean countries.³⁰

The size and composition of the population in Istanbul in the 17th century is not quite clear. There is, however, a remarkable stability with regard to the proportions of Muslim and non-Muslim habitants.³¹ The same proportion as mentioned above is reflected in the population data of 1689.³² Mantran evaluates the evidence of several reports and estimations, concluding that the size of the population was probably between 800000 and one million.³³ This estimation is, however, not uncontroversial. Recent research findings need to be evaluated.

Evliya Chelebi's (1611–1683) *Seyahatname* and Eremya Chelebi Kömürjian's (1637–1695) work in Armenian on the history of Istanbul, give us some information on the composition of the population in the 17th century and describe the habitats of the Greek, Armenian and Jewish communities in the city. Evliya Chelebi informs us that there were 9990 Muslim quarters, 304 Greek, 657 Jewish, 17 Frankish, and 27 Armenian. The number of Muslim quarters may have been exaggerated, but it could also be consistent. Figures for 1634 list 1525 '*avariz hanesi*', which was a fictitious unit comprising several households each.³⁴ The small minorities included Roma, Arabs, Albanians, and Vlachs. The non-Muslim minorities lived in compact settlements in the vicinity of their churches. They had their own administration and legal representatives.

The relation between spoken varieties and the composition of the population does not reflect any direct correspondence between religion, ethnicity and linguistic competence. Even the Muslim population was linguistically heterogeneous. The turcophone groups that moved into the city after the conquest and settled down both in the old city and in Galata came from the Balkans and Anatolia and spoke different Turkic varieties. On the other hand some minority groups, such as the Armenians, shifted early to the dominant Turkish language.

The Christian communities

The Greek community

The upper classes of the Istanbul Greeks – the aristocracy, the clergy, and the commercial bourgeoisie – seem to have adjusted to their new rulers quite smoothly. It is well known that, when the Catholic European powers during the last days of the Ottoman Empire promised to ward off the Turkish besiegers if the Byzantines agreed to submit to Rome, the latter pronounced that they would

30 Mantran 1962, 44–47; İnalçık EI² IV, 225b, 238b–239a.

31 Mantran 1962, 44.

32 Mantran 1962, 46.

33 Mantran 1962, 47.

34 Mantran 1962, 41; İnalçık EI² IV, 238a, 243.

“rather see the turban of the Turks rule in Constantinople than the Latin mitre”.³⁵ This might lead one to believe that the Greeks, when the city was eventually conquered, were not too discontented with their new rulers, since at least they had not succumbed to Catholicism.³⁶ In later centuries voices were raised in the Orthodox community accusing the elite of having forgotten the benefit of their own community and of focusing only on profiting from their position in the Ottoman state. It was only at the end of the 18th century that a movement aiming at liberating the Greeks from Ottoman rule was initiated. This did not take place in Istanbul, but in the periphery of the empire.

The politically most important positions as mediators in the Ottoman Empire were permanently held by Greeks. From the late 17th century on, the position of dragoman of the council of ministers at the Ottoman court was reserved for Greeks, subsequently also the position of dragoman of the navy. These dragomans were recruited from Phanariot circles, the post-Byzantine Orthodox aristocracy of Constantinople. The dragomans and other Orthodox officials employed at the court were quite proficient not only in court Ottoman but also in Arabic and Persian. Among the Greeks, thorough command of the Ottoman court language seems to have been “the monopoly of some Phanariot families”.³⁷

Did this also mean close contacts between the languages?³⁸ For the 17th century, the general impression is rather of separation between the groups. It is interesting to note that, in the 17th century, the relations between the non-Muslim confessional communities in Istanbul seem to have been quite limited and marked by hatred and jealousy. Henry Blound, who visited the city in the beginning of the century, writes about the Christian groups: “Each loves the Turke better than they doe each of the other, and serve him for informers and instruments against one another”.³⁹

Greek, the language of the conquered Byzantines, enjoyed the role of a prestige language not only among its speakers but also in other Orthodox groups.⁴⁰ But the *millet* system did not necessitate communication with other communities on a broader scale. At least the upper classes of Istanbul Greeks were in no need of learning Turkish. This isolation continued for centuries among parts of the Greek population: it was only in 1895 that Turkish became compulsory in Greek schools.⁴¹ Translation activities and other kinds of participation in Otto-

35 Clogg 1982, 191.

36 As late as the late 18th century, a kind of gratitude towards the Turks was expressed by Orthodox clerics. Thus the Patriarch Anthimos of Jerusalem argued that “God had inspired in the heart of the sultan of the Ottomans an inclination to chastise Christians who deviated from their faith so that ‘they have always before their eyes the fear of God’” (Clogg 1982, 191).

37 Strauss 1995a, 191.

38 Extensive contact between Turks and Greeks had also taken place in Byzantine times, though not so much in Istanbul. The linguistic vestiges of this contact in the form of Turkish names and single words have been collected by Moravcsik (1958). For linguistic contacts on the eastern Black Sea coast, cf. Brendemoen 2002, especially I, 286–290.

39 See Frazer 1983, 95; also Anhegger 1986, who gives an interesting survey of incidents caused by the hatred between these groups, including Catholics and Protestants, through the centuries; cf. also Kömürçüyan 1988.

40 E.g., Bulgarians, see Clogg 1982, 188.

41 The Greek war of liberation and the increasing Greek nationalism may have reduced the interest in Turkish during the 19th century, cf. Kappler 1995, 357.

man literary life are broadly attested to only from the 18th and particularly the 19th century.⁴²

Many Greeks lived in isolation from the regular Ottoman society, in the 'Frankish' Galata,⁴³ a buffer zone between the Europeans – mostly Venetians – and Turks. The view that the Turks practised segregation from European merchants is questionable. There are several examples of Turkish merchants traveling to Venice and of direct commercial contacts between Turks and Venetians in Galata.⁴⁴ Though the proportion of Turkish inhabitants in Galata had increased rapidly in the 16th century, the vast majority remained Greek for centuries and cannot have consisted only of Phanariot families or wealthy merchants.⁴⁵

With respect to the early contacts between the Ottoman and the European culture, Tietze states the following about the non-Muslim groups, mainly the Greeks:

... there must have been also many people of the middle class as well as commercial employees, artisans, sailors, etc., who visited the western ports and perhaps worked there for some time and who thus were able to a certain extent to acquire an idea of European culture, music, folklore, manners and thinking. Knowingly or unknowingly, they must have communicated the experience to their friends and neighbors at home. We can therefore assume that in many circles of the *millets* there existed already an openness and acceptance of things European at a time prior to the appearance of such a ferment, of such a change of attitude, among the average, and even among the élite, Muslim inhabitants of the capital.⁴⁶

The maritime dominance of the Greeks over the Eastern Mediterranean was also an important cultural factor.⁴⁷ The Greeks must have played an important part in the development of the Turkish fleet that started in the 16th century. These are prerequisites for the development of the nautical *lingua franca* of the Levant, a mixture of Greek, Italian, and Turkish terms. Istanbul and other parts of the empire were important scenes of this interaction. Though it is difficult to determine exactly when and where the process took place, it is clear that the Greeks, who were strongly represented in maritime professions and had experience from working on Italian ships, were intermediaries in the transmission of the techniques of shipbuilding and seafaring.⁴⁸

At a popular level there must have been extensive contact between Greeks and Turks, not only in Istanbul but also elsewhere. Otherwise the vast lexical impact of Greek on Turkish and vice versa would be inexplicable. It is not known, however, in which century a contact situation emerged that allowed extensive code-switching.

42 Kappler 1995, 355.

43 Dursteler 2006, 154.

44 Dursteler 2006, 158–173.

45 Dursteler 2006, 155, Mantran 1962, 54.

46 Tietze 1991b, 392.

47 Mantran 1962, 56.

48 Kahane *et al.* 1958, 15. Kahane and Tietze have done very valuable research in this field.

Karamanlids

One population element of special importance as mediators between the cultures was the Karamanlids (*Karamanlılar*), Turkish-speaking Orthodox Christians. They did not live in Galata, but in a large area within the old city: from Yedikule eastwards towards Samatya, close to the Sea of Marmara (*Fig. 1*). They are pointed out as a special group by Hans Derschwam who visited the city in 1553–1555,⁴⁹ and by Nicolas de Nicolay who was there at approximately the same time.⁵⁰ According to Derschwam they had been transferred to Istanbul from 'Caramania' by Selim I (1512–1520), though there had also been a group of turcophone Christians in the city at the time of the Turkish conquest. The group is also mentioned by Eremya Chelebi Kömürjian in his history of Istanbul.⁵¹ According to Kömürjian's commentator Andreasyan,⁵² they originally had their own church close to Yedikule, but then extended further up to Samatya and also settled in Fener and other districts, where they began to use the local churches and ceased to be a community of their own.

The Karamanlid literature is written in Turkish with Greek letters. Most of it has come down to us in printed books from the 18th century onwards. Some manuscripts from the 17th century have been preserved, but there is no indication that they were written in Istanbul.⁵³

The Karamanlid population of Istanbul might have played a significant role as mediators between Christians and Muslims in the city. But the fact that they originally came from the countryside and spoke Turkish most probably was an obstacle to their acceptance by the Greek-speaking population in Istanbul, at least by the upper classes.⁵⁴

Armenians

The non-Muslim group of Armenians was much more active than the Greeks as linguistic and cultural mediators in 17th-century Istanbul. A large part of the Armenians in Istanbul and western Anatolia originally came from the east owing to the turmoil caused by the Jelâli insurrections of the 16th century. Some had arrived even earlier. In areas of extensive contacts with Turks they became proficient in Turkish, and possibly many of them spoke little or no Armenian. As early as the 14th and 15th centuries, it was quite common for Armenian authors to write both in Armenian and in Turkish.⁵⁵ From the 17th century on, ballads written by minstrels are particularly well known.⁵⁶ The Armenian literature in Turkish was written in Armenian script. It is of great linguistic interest because

49 As a member of a Hungarian delegation, see Babinger 1923, 52.

50 The French traveller Nicolas de Nicolay in approximately the same years; 1989, 229; English translation [1585] 1968, 128.

51 Kömürjian 1988, 2; the chapter in question was written between 1661 and 1665 (see xxiv).

52 Kömürjian 1988, 70.

53 Eckman 1964, 821–822.

54 However, it should be kept in mind that also the Greek population of Istanbul was very heterogeneous with regard to origin; many of them originated e.g. from the Aegean islands and different places in Anatolia. The Phanariots may have constituted only a small percentage of the total Greek-Orthodox population.

55 Sanjian & Tietze 1981, 9–10.

56 Berberian 1964, 811–813.

it tends to reflect the pronunciation more adequately than texts in Ottoman script.⁵⁷

The early Armeno-Turkish literature of Istanbul is insufficiently investigated, partly because it is rather inaccessible. The only 17th-century work edited in a scholarly manner is 'The Jewish Bride', an epic romance written by the most important cultural mediator, the above-mentioned polyhistor K  m  rjian. The author had profound knowledge of Ottoman and Armenian history, and was proficient in Turkish, Greek, Latin and other European languages. He had strong ties to the Armenian church and to high-ranking Ottoman pashas. He is reported to have "held various offices in governmental circles [and] in European embassies", but "no documentary evidence exists concerning the specific offices held by him in the Ottoman government or in the foreign embassies".⁵⁸

K  m  rjian's major contribution to the composite Istanbul culture lies in the field of literature. Besides numerous historical, religious, and literary works in Armenian, he wrote several Armeno-Turkish works. The latter include some interesting polemical works against the Greeks, testifying to the great animosity between the two groups.⁵⁹

K  m  rjian composed an Armenian and a Turkish version of 'The Jewish Bride'. There is also an anonymous Greek version and a later French translation of the Greek version. The romance deals with an event that, according to the Greek version, occurred in 1667. The Armeno-Turkish version is of special linguistic interest. It reflects a variety that may, to some extent, mirror the speech of Armenians in Istanbul, but it also largely complies with what is known about the common Istanbul vernacular of the 17th century.

Mediators

Travellers, scholars, dragomans

Foreign travellers played a crucial role in the transfer of knowledge from the Ottoman capital to European scholarly communities. One well-known example is Pierre Gilles, who in the 16th century wrote a comprehensive description of the city's topography, a four-volume work published in 1561 in Lyon under the title *De topographia Constantinopolis et de illius antiquitatibus*. Since our interest is focused on the linguistic topography of Istanbul, we will mention mediators who transmitted information on the linguistic varieties spoken and written in Istanbul after 1453. Several authors were Europeans interested in Oriental studies.⁶⁰ Many of these early modern scholars collected manuscripts in Oriental languages such as Persian, Arabic and Turkish, collections that paved the way for Oriental studies at European universities.⁶¹

57 The vast bulk of Armeno-Turkish literature was written from the 18th century onward, just as the Turkish literature of the turcophone Greeks. The establishment of printing presses represented a turning point for this kind of literature.

58 Sanjian & Tietze 1981, 18.

59 Sanjian & Tietze 1981, 37.

60 Hamilton *et al.* 2005.

61 See e.g. R  mer 1998 with further references.

Another group of mediators was the dragomans, whose role was of paramount importance in Ottoman diplomacy, trade, and cultural exchange.⁶² They were interpreters and served as mediators in diplomatic negotiations, in war and in trade, in legal and other affairs. Their task was described by Garzoni in 1587: “The professional interpreters occupy a most prominent place within the framework of social and ethical values. In order to punish the world, God has brought the division of languages. Therefore the interpreters, by bridging the gap, fulfil an almost redemptory task”.⁶³

Different languages served the contacts between the chancery of the Ottoman Empire and the European powers: for example, Serbian with Mathias Corvinus’ court; Greek with Venice, Florence, and the Order of St. John; Italian with the Italian princes and the Habsburgs. Most Levantine dragomans active at the embassies of the European powers in the 16th and 17th centuries knew Italian.^{64,65}

The dragomans were of foreign origin or members of a non-Muslim minority. They played a crucial role in channelling and conducting diplomatic relations. Some European interpreters, including Michael Czernowitz, were even involved in espionage.⁶⁶

The official dragomans of the Porte, mostly renegades mastering several European languages and even Latin,⁶⁷ had acquired a certain level of knowledge of Ottoman including its elements of Arabic-Persian origin. The level they attained in their work was, however, generally rather low.⁶⁸ Elaborate documents written in literary Ottoman with its rhymed prose and intricate style complicated their task.⁶⁹

One dragoman, Ibrahim Beg, tried to solve his linguistic problems when analysing a Sultan’s decree prior to translating it by first making a transcription of the Ottoman original in Latin characters. This transcription was at the same time a simplification of the style and vocabulary of the document.⁷⁰ This technique gives us unique insight into the dichotomy between the literary and the colloquial language of the Middle Ottoman period.⁷¹ Ibrahim Beg also wrote, to the Venetian interpreter Michele Membre, a Turkish letter in Latin script whose language represents a colloquial variety.⁷²

Dragomans were also engaged in translating the Bible into Oriental languages. Albertus Bobovius (Wojciech Bobowski, later known as Ali Ufki), who served as translator at the court of Sultan Mehmed IV, was raised as a Christian but converted to Islam. He translated the Anglican catechism into Ottoman Turkish, compiled a Turkish grammar, and wrote an explanation of Islam in Latin in an attempt to increase the mutual understanding of two cultures. His Bible translation *Kitabı Mukaddes* ‘The Holy Book’ was for a long time the only complete

62 See e.g. Marghetich 1993 [1898].

63 Garzoni 1587, translated from a text by Palumbo Fossati Casa, who refers to Abbrugiati 1989.

64 Bosworth 2000, 238.

65 In French they were called *barataires* because they received *berats*, documents bestowing fiscal and commercial privileges upon them. Séraphin-Vincent 1997, 143.

66 Lesure 1983.

67 Römer 2008, 217.

68 There were a few exceptions such as Mahmud Beg; see Matuz 1975, 28 and 38.

69 Römer 2008, 224.

70 Römer 1996, 2008, 222–223.

71 On the Ottoman diglossy, see Strauss 1995b.

72 See Bombaci 1949; Römer 2008, 223.

Turkish Bible. Another dragoman, Yahya bin 'Ishak, also called Haki, translated the Hebrew Bible (1659) into Turkish.⁷³

Owing to a generally unsatisfactory situation, many European courts decided to educate their own reliable and loyal dragomans. This led to a number of initiatives to teach Oriental languages, as exemplified by⁷⁴ the Venetian *Giovani de la lingua* in the 16th century, the French *Jeunes de la langue* and the Polish equivalent in the 17th century,⁷⁵ and the Austrian *Akademie Orientalischer Sprachen* in the 18th century.^{76,77}

Transcription texts

Mediators in need of language-learning material produced grammars and vocabularies, often in non-Arabic script, for instance in Latin, Greek, Armenian, Cyrillic and Georgian.⁷⁸ These are of great interest for the study of the development of spoken varieties of Turkish, since they provide more information than the Ottoman sources in Arabic script. The motivation to write down Turkish texts in a non-Arabic script was mostly not academic, but resulted from practical needs. The target language was colloquial Turkish, not the high varieties of the classical literature or the chancelleries. The authors were non-Turks who had learned the language through practical contacts with Turks and tried to teach others. One important group consisted of the above-mentioned mediators: foreigners who lived in Istanbul for different reasons, diplomats or members of their entourage, missionaries, and travellers.

In the 16th and 17th centuries continuous diplomatic contacts were established as a result of the armed conflicts between the Turks and the Europeans. Confrontation with the Turks also took place in the field of religion: Christian missionary activities in the Ottoman areas were intensified, especially by the Jesuits.

The first academic dictionary of Ottoman-Turkish is *Thesaurus linguarum orientalium, Turcicae, Arabicae, Persicae* 1–3, a fundamental work in Turcology comprising about 62000 words. It was published in 1680 in Vienna by Franz Meninski (François de Mesgnien) and re-edited in 1780 by a group of scholars from the newly founded *Akademie Orientalischer Sprachen* in Vienna. Meninski was a dragoman who studied in Rome under the direction of the Jesuits and who accompanied the Polish ambassador to the Porte in 1653. He stayed in Istanbul from 1653 to 1660, and later became a translator at the imperial court in Vienna. His knowledge of Turkish was excellent. His voluminous work represents literary Ottoman and contains about 70 per cent educated vocabulary and 30 per cent common language. It has a special value for linguistic history, since the words are

73 Neudecker assumes that Haki was employed in Ali Bey's dragoman office; see Neudecker 1994, 4.

74 See e.g. Irwin 2006; Lewis 2004.

75 Hitzel 1997.

76 Rathkolb 2004.

77 Famous dragoman dynasties included Crutta at the embassies of Poland, France and England; Fonton, Timoni of Venetian origin; Hübsch, Klezl, an Austrian dragoman family. See de Groot 2005, 142.

78 Some transcription texts are kept in Carolina Rediviva, the university library of Uppsala University. See Johanson 1985a and b.

accompanied by a transcription in Latin script and the so-called vulgar forms are indicated in many cases. Another outstanding work is his *Grammatica turcica*, published in 1680 and 1756.⁷⁹ The first printed Turkish grammar was written by the German scholar Hieronymus Megiser (1612).⁸⁰

In so-called transcription texts of the early periods, the Turkish samples often consisted of scattered words or phrases. They were cited in travel accounts or memoirs of prisoners of war, whose authors liked to embellish their works with Turkish phrases as a proof of their authenticity. From the 16th century on, authors with a special linguistic interest appeared. They wrote manuals to teach Turkish as a foreign language: grammars, dictionaries, and conversation books which almost always provided coherent text samples.

The linguistic evidence of transcription texts

The analysis of transcription texts, even texts in Latin script, is a difficult task.⁸¹ If they are to be used as sources for the reconstruction of Turkish varieties the graphic representation must be studied carefully. The graphic system of the author's mother tongue can mostly serve as a starting point for understanding how the Turkish sounds are rendered. But also graphic patterns from other languages may be employed. The transcription may vary within one and the same text. There were no standardized orthographies for the European languages of the time that interests us here. Both Turkish and German distinguish *o* from *ö* and *u* from *ü*, but the graphic differentiation of these sounds in German texts started rather late. The differentiation of Turkish back *ı* and front *i* causes the greatest difficulties. Most transcription texts in Latin script use «i» for both.

Transcription texts are valuable sources for historical phonology and morphophonology. They have shed light on processes of sound change such as the developments of the fricative *ɣ* and the nasal *ŋ* in the history of the Turkish language. They provide highly significant data for the development of labial harmony, a process that became prevalent in the Middle Ottoman period (16th–18th centuries).⁸²

Most instructive results could be obtained from the edition and analysis of Jakab Nagy de Harsány's *Colloquia* (1672).⁸³ The text offers rich information on the everyday life in Istanbul in a language that certainly represents a spoken variety of Istanbul. It gives a comprehensive picture of the morphophonological system of this stage of development as well as convincing explanations of the sound harmony processes.⁸⁴

Further transcription texts that are suitable as sources for the linguistic varieties of Istanbul need to be edited and analysed. The results should be compared in order to define specific features and general trends. Important texts for further research are those of authors who spent enough time in Turkish-speaking sur-

79 See Meninski 1680a, b; 1687; 1756²; 1780².

80 See Stein 1975, 1979, 1984, 1993, 2002, 2004, 2006 and 2007.

81 See a recent research on transcription texts in Csató *et al.* (eds) forthcoming.

82 Hazai 1973.

83 See Hazai 1973.

84 See the analysis in the framework of Johanson's theory of labial harmony, Johanson 1979.

roundings to acquire sufficient competence in the language, for example Argenti (1533),⁸⁵ Ferraguto (1611),⁸⁶ Molino (1641),⁸⁷ and Harsány (1672).⁸⁸

Transcription texts have been investigated mainly with respect to phonology and vocabulary, whereas their morphological and syntactical properties have been dealt with to a much lesser extent. Concentrating on these aspects could help solve the question of Rumelian influence.

One further task is to find stylistically suitable texts in Arabic script which provide data on morphology and syntax and – when vocalised – can serve as a complement to the phonological data. Encouraging steps in this direction are detailed analyses of the language of Evliya Chelebi's *Seyahatname*.⁸⁹

Linguistic Urban Minds

A linguistic programme within an interdisciplinary project to study the urban mind of Istanbul in a historical perspective has been outlined above.

Istanbul of the 17th century can be regarded as a special type of linguistic area. A linguistic behaviour transgressing primary solidarities and boundaries was triggered under specific political-cultural circumstances, by the daily encounters among large groups with different social, cultural, economic, and linguistic backgrounds in the dense co-urban private and public spaces of the city. The linguistic processes emanating from these settings led to new relations between the codes, emergence of new codes, shift and loss of codes. The linguistic ecological system accommodated in the physical landscape of the metropolis underwent significant changes, but the codes nevertheless enjoyed remarkable viability.

The outlined project will examine the nature of the linguistic processes and practices, and their products in the framework of the code-copying model, which emphasizes the creative ecological function of contact-induced processes.

Our stance is that the study of linguistic ecological systems is a major contribution to environmental studies. The linguistic 'urban mind' of the imperial and pre-modern Istanbul of the 17th century had significant idiosyncratic attributes. Nevertheless it manifests a model of a certain type of linguistic urbanity which can be compared to other urban linguistic environments. A typology of urban linguistic spaces may be outlined along carefully selected parameters. The linguistic dimension has so far been less studied in investigations of modern urban environments in historical perspectives.

In order to understand the patterns of communication, it is necessary to describe the landscape in an interdisciplinary perspective. The description must include physical characteristics of the city, the spatial syntax of settlements, and the social and administrative networks characterized at macro- and micro-levels. Essential issues are the use of different codes in the confessional communities and their contacts with the Ottoman administrative and judicial system, and the organizations of craftsmen and merchants. Other issues are the social habits of personal contact between Turkic and non-Turkic speakers in the grounds of commerce, public spaces, and other characteristic points in an urban environment.

85 See Adamović 2001; Bombaci 1938; Rocchi 2007.

86 See Bombaci 1940; Stein forthcoming.

87 Molino 1641; Adamović 1974; Kappler 1999.

88 See Hazai 1973.

89 Boeschoten 1988; Develi 1995; Bulut 1997.

Though the religious activities of Muslims and non-Muslims were internal affairs of the communities, they also offered public places for encounters.

The linguists will have to identify the interacting spoken and written codes as precisely as possible on the basis of already available material, using especially the transcription texts, and provide a description of the basic characteristics of the speech communities in Istanbul in the historical period 1453–1700, with special focus on the 17th century. The linguistic processes forming the codes must be analysed by synthesizing previous knowledge and by evaluating new material. The programme aims at mapping the validity areas of the codes onto the physical landscape of the city, and correlating the functional load of the codes with the properties of the landscape. One point concerns the proportion of multilingualism: evaluation of the extent to which the speech communities, which possessed primary codes emblematic of their identity, also employed secondary (inter-group) codes for external communication.

Linguistic diversity is a hot issue even in our own time. “Public policies concerning linguistic diversity in various countries and international organizations increasingly appear at the forefront of public debate.” Linguistic issues and, in particular, the treatment of minority languages are almost unparalleled in terms of their explosiveness and emotional appeal. As was pointed out by Bretton, “language may be the most explosive issue universally and over time. This is mainly because language alone, unlike all other concerns associated with nationalism and ethnocentrism [...] is so closely tied to the individual self. Fear of being deprived of communicating skills seems to raise political passion to a fever pitch”.⁹⁰ A historical perspective may provide us with significant new insights into the nature of the issues involved.

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90 Bretton 1976, 447; Fidmurc 2006, 1.

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18. Multilingualism and Language Contact in Urban Centres along the Silk Road during the First Millennium AD

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ABSTRACT

Cities are places of ethnic and linguistic diversity, and thus of language contact. This is illustrated by the oasis city-states along the Silk Roads in Central Asia that developed into cosmopolitan centres of an amazing religious, ethnic and linguistic diversity during the first millennium AD. The growing trade on the Silk Roads, missionary activities, shifting political, religious and military domination, and last but not least climatic changes led to increasing immigration into the cities, creating a multilayered linguistic ecological system of interacting spoken and written codes. A flourishing written culture developed; and the rich activity of urban cross-cultural exchange is not only reflected in art and architecture, but also in a vast variety of texts and manuscripts translated and annotated in more than twenty different languages and nearly as many different scripts. Traces of the cross-cultural contact are also revealed by the individual languages themselves, which changed dramatically on many different levels. An ecolinguistic study of Tocharian – one of the lesser known tongues of the Turfan and Kucha area along the northern route of the Silk Road – taking into account status, internal variation, domains of usage, concurrent codes and language contact, reveals one aspect of an “urban mind”: namely, the efforts and success of city dwellers to tackle communication in the multilingual settings of the city. In creative processes the speakers in close spatial coexistence changed and adapted their codes, both the spoken and the written ones, and developed new varieties and registers. Tocharian shows traces of the impact of concurrent codes, not only in the lexicon but also on the structural, morphological and morphosyntactic level. For reasons yet to be explored, Tocharian was abandoned as a high-status written code sometime between the eighth and the tenth century AD, and at an unknown point in time it became extinct as a spoken code as well.

Introduction

“At this time there was a big city, Ketumatī by name, twelve Yojanas in length, seven Yojanas in breadth. ¹It was sublime and wonderful, decorated and clean, full of virtuous people. [...] In the city the houses and lanes had no fine dust lumps of earth. The ground was covered totally with gold: everywhere there were stores of gold and silver. There was a great Yakṣa-god, Bhadrāsikṣa by name, who always protected this city and cleaned it. If there was any excrement, the earth would split, take it and close again. When a man was near the end of his life, he himself went naturally to the tomb and died there. At this time the world was peaceful and pleasant. There was no worry about being robbed by hateful thieves. In the cities and villages no one closed the door. There were also no calamities of being old and being worried by flooding, fire, wars, famines, poisons, etc. [...] In the ponds of the groves and gardens, there was natural water of eight merits. Blue, red, purple, white, and multicolored lotus-flowers covered them totally. [...] The flowing water was excellent, of which the sweet taste could cure diseases. It rained timely and the crops were flourishing. No injurious grass grew. Having sown once, one could reap seven times. Less labor procured more products...”

This depiction of the ideal city is taken from the Chinese “Buddha-spoken Sūtra of the Descending from Heaven and Becoming Buddha of Maitreya”.² Similar descriptions are found in the fifth chapter of the Old Turkic Maitrisimit³ and in a much more fragmentary form in the East Tocharian version of the Maitreyasamitiṇātaka.⁴ The latter two derive from manuscripts dating back to the second half of the first millennium AD, found in oasis cities in the northern part of the Tarim Basin in Central Asia, present-day Xinjiang in China. The Central Asian texts can be read as the utopistic counterpart to Juvenal’s famous satire (Satira III) where one of the protagonists is leaving Rome because he finds the city too noisy, too dirty, too unsafe, and hosting far too many foreigners. While Juvenal’s character mockingly condemns his city for its failures, the texts from Central Asia, reflecting the strong bonds of the younger Buddhism to urban culture,⁵ present the “urban” in a fairytale-like light. What Juvenal depicts as found wanting in an urban setting, is displayed in an urban scenario of a dream come true in the Central Asian texts: unpolluted air and water, well-functioning ecosystem services, clean streets, green areas, and peaceful neighbours. The issues, though addressed in contradictory manners, are basically the same, and they are familiar ones for any city dweller of today. The ancient texts acquire unexpected up-to-dateness.

However, there is something that is curiously lacking in the texts from Central Asia: in contrast to Juvenal’s protagonist who explicitly complains about the many foreigners in Rome, there is no mention whatsoever of ethnic or linguis-

1 The measurements “twelve Yojanas in length, seven Yojanas in breadth” are part of a stereotype description (literary cliché) of an ideal city, shared by several Indian religious and literary traditions. With the length of a *yojana* shifting somewhere between 6 and 15 km in the different traditions, these measurements can hardly be taken literally; cf. Schlingloff 1969, 79–83, 103 with fn. 3, 104.

2 Taishō-Tripitaka, Vol. 14, 423c–424a, cited in Ji, Winter & Pinault 1998, 15–16.

3 Editions Tekin 1980; Geng, Klimkeit & Laut 1988.

4 Edition Ji, Winter & Pinault 1998.

5 Strauch 2005, 137.

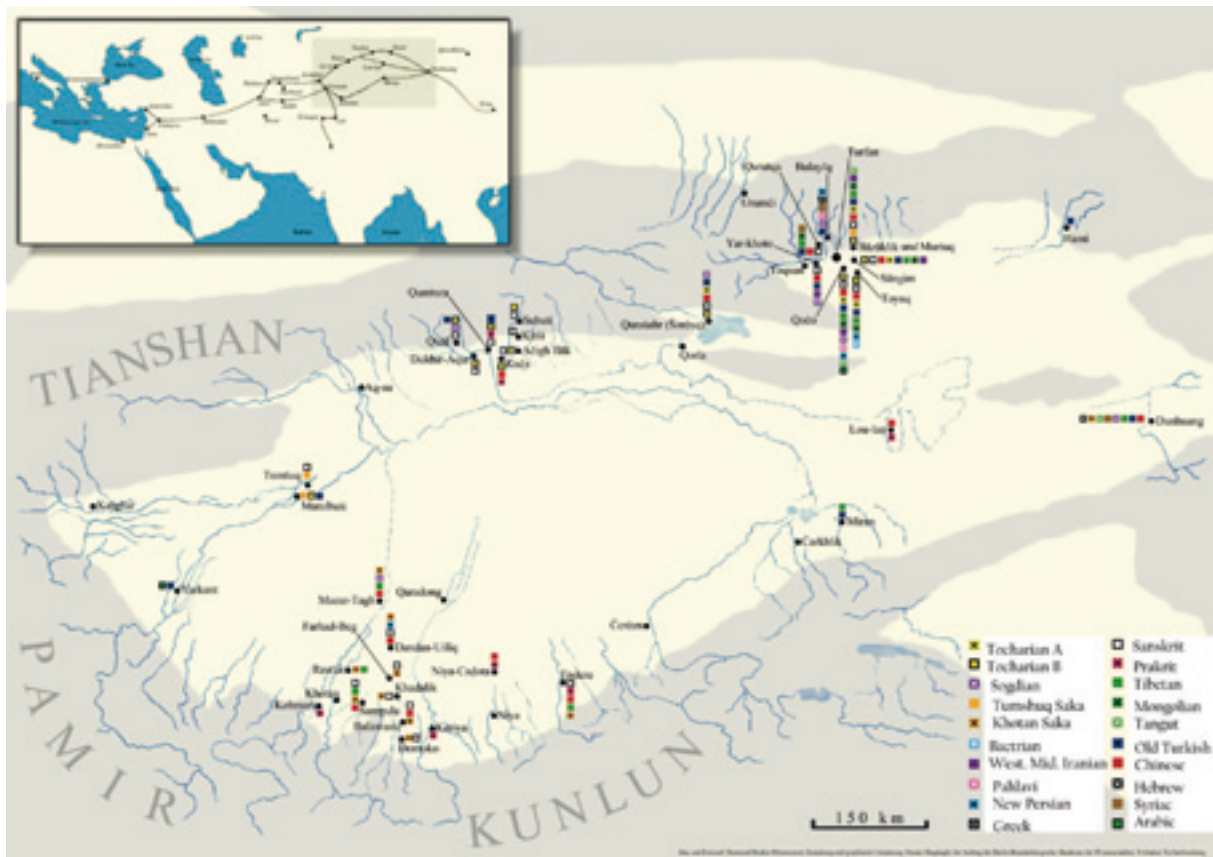


Fig. 1. Eastern Turkestan. Sites where texts in a series of different languages and scripts have been found. The map inserted in the upper left indicates the routes of the Silk Roads. Map by Desmond Durkin-Meisterernst and Ramin Shaghaghi. Courtesy of the Academy Project Turfan Studies, Berlin-Brandenburgische Akademie der Wissenschaften, Berlin.

tic diversity in the Chinese Sutra, the Old Turkic Maitrisimit, or the Tocharian Maitreyasamitiṇātakam.

Considering the multiethnic and multilingual situation in the oasis city-states of the Tarim Basin during the first millennium AD and the resulting cultural, political and economic dynamics, this is indeed curious. In the Turfan oasis on the northern route of the Silk Road, manuscripts in no fewer than 22 languages written in nearly as many different scripts have been recovered in archaeological excavations (Fig. 1).⁶ The archeological findings from sites like Kucha (Kučā) further west, Dunhuang in the east, or Khotan on the southern route, display a similar – even if not quite so varied – picture.

In the colophon appended to the end of each chapter of the Maitrisimit manuscript, the writer states that the Old Turkic text is translated⁷ from Tocharian, and the Tocharian from a Sanskrit original. Even considering that the original version of the text was created somewhere in India,⁸ it still is surprising that nothing is said about inhabitants of an ideal city, with different vernacular tongues, being able to communicate with each other. Buddhist texts, translated from Indian originals into the languages of Central Asia, were often modified and adapted to

6 For an overview see *Turfan Studies* 2007, 9.

7 Or “transformed”, the Old Turkic uses different terms for the two different operations; cf. discussion in Geng, Klimkeit & Laut 1988, 216–217; Tekin 1980, 75. See also Thomas 1989.

8 The Sanskrit version of this text has never been found though.

the conditions and circumstances of the region.⁹ With the extraordinary linguistic diversity of the urban centres of Central Asia in mind, we would expect at least some remark on language skills and mutual comprehensibility in an ideal city.

Interestingly, language skills are not mentioned either in another passage of the Maitrisimit, dealing with the wondrous skills and abilities of the young Buddha.¹⁰ In a beautiful scene it is described how the young Buddha Maitreya – without being taught how – can miraculously write hundreds and thousands of characters in different scripts,¹¹ yet nothing is said about him speaking different languages. This scene is not only an illustration of the prestige of literacy in (later) Buddhism,¹² it could also be taken as an indication that a certain amount of multilingualism was considered a normalcy, part of the “urban mind” in the cities along the Silk Road, just as it is a normalcy in the urban settings of today.

History, geography, climate¹³

The history of Central Asia is one of shifting political and ethnic dominance. Hardly ever under one rule, the political power was divided among many different local rulers, at times under Chinese, and later Tibetan or Turkic, overlordship. Central Asia during the first millennium AD was neither linguistically nor culturally homogeneous. This holds true in particular for the area which is the focus of this study, namely the Tarim Basin in Eastern Turkestan, the present-day Xinjiang Autonomous Region in Western China.

During the first millennium AD oasis city-states along the trade routes following the northern and southern rim of the Tarim Basin developed into cosmopolitan centres. The rapidly growing trade along the Silk Road, missionary activities, shifting political, religious and military domination, and last but not least climatic changes particularly during the third and late eighth centuries, led to increasing immigration of different peoples from all over Central Asia.

Situated on the northern and southern edges of the Tarim Basin and the Turfan depression, respectively, and cut off from the south-east monsoon by huge mountain ranges, the oasis city-states were largely dependent on the snow and glacial run-off of the Tien-Shan Mountains in the north and the Kunlun in the south.

According to Yang Bao *et al.* (2004) it is possible to correlate the expansion and flourishing of Han era settlements (206 BC–AD 220) with a period of higher temperature and increased precipitation between c. 200 BC and AD 270 in northwestern China, Xinjiang included. On the other hand the succeeding period of cooling and decreasing precipitation led to the abandonment of several cities on the southern rim of the Tarim Basin. Ancient Niya and Karadong were abandoned around the end of the third century, Loulan about a hundred years

9 Cf. Laut 1991, 266–170; Thomas 1989.

10 Edition Geng, Klimkeit & Laut 1988b, 315–366.

11 Edition Geng, Klimkeit & Laut 1988b, 359–360.

12 Cf. Salomon 1998, 7–14.

13 For the general part of this article I have consulted the following books, articles and sites: Deeg 2005; Golden 2006; Hitch 2009; Mallory & Mair 2000; Millward 2007; Pinault 1998a; 2001; Silk Road Seattle <http://depts.washington.edu/silkroad/>; Interdisciplinary Center for Ecosystem Dynamics in Central Asia <http://www.geog.fu-berlin.se/~edca/>.

later.¹⁴ The climate data correspond very well with the fact that there are no text findings from the sites of Niya and Loulan later than the 3rd or 4th century AD: due to the devastating droughts people had left the southern cities, and probably moved further north.

As a consequence of the decline of the cities in the south, the main east-west trade routes were shifted to Kucha and Aqsu along the northern rim of the Tarim Basin, bringing not only traders but also waves of new inhabitants with different cultural and linguistic backgrounds into the cities in the north.

Objects of art, mural paintings, artefacts, and last but not least thousands of manuscripts vividly reflect the cultural richness, cross-cultural exchange and urban refinement of the city-states in the Tarim Basin. Among the many religions flourishing in the area (Zoroastrianism, Manichaeism, Nestorian Christianity and, later on, Islam), Buddhism played a crucial part. Spread from northern India to China, Buddhism seems to have been one of the factors attracting and uniting the various peoples in the urban centres. Famous Chinese pilgrims like Faxien and Xuanzang describe Kucha and Agni as centres of Buddhism, with monasteries housing thousands of monks, engaging in studies, religious service and translation activities. Patrons of these monasteries were not only local (petty) kings¹⁵ but also merchants and traders, craftsmen and their guilds.¹⁶

The linguistic landscapes¹⁷ of Turfan and Kucha

The linguistic landscapes of Turfan and Kucha during the first millennium AD included not only Chinese, Tibetan, Sanskrit and (Middle Indic) Prakrit, Middle Iranian Bactrian, Sogdian, Pahlavi, Khotan and Tumšūq Saka, Old Turkic and Mongolian, but also lesser known tongues like Tocharian. Together with the different languages a variety of different scripts were in use in the cities of Central Asia, and some of the languages are attested written in up to nine different scripts. The rich findings of both religious and secular texts in the different languages give us a glimpse not only into the daily life and cultural, religious and economic activities of the urban dwellers, but also into the linguistic ecology¹⁸ of the oasis cities: concurrent codes coexisted and interacted in spoken and written, standardized and non-standardized varieties, the different codes and scripts being used for different purposes.

Bilingual texts, texts in so-called mixed languages, translations, colophons, and manuscripts annotated with glosses written in between the lines, reveal one aspect of the urban mind: the efforts and success of city dwellers and of monks in monasteries in the cities and nearby to tackle communication, religious and scholarly matters, commerce and administration in these complex settings of extraordinary ethnic, cultural and linguistic diversity.

Implicitly, as will be shown below, the urban mind is also reflected in the

14 Millward 2007, 26 and refs. See also De LaVaissiere 2004, 113–14, Werning, 2007, 41–47.

15 Pinault 1994, 94.

16 Strauch, 2005, 137.

17 Linguistic landscape is used here in the broader sense, not as a technical term; for a discussion see Backhaus 2007, 9–10.

18 For the concepts of language ecology and ecolinguistics, see Haugen 1972, 325–339, Fill 1998, 3–16 and Fill & Mühlhäusler 2001, 1–9.

different codes themselves. The spatial closeness and the intense interaction of speech communities with many bi- or multilingual speakers produced contact phenomena and resulted in language change visible on all levels in the different codes. New varieties emerged at the same time as local vernaculars were maintained, but codes were also shifted and eventually died. Results of change and transformation are manifest in the mixed code of Turco-Sogdian,¹⁹ and traces can also be detected in Tocharian.

Tocharian from an ecolinguistic perspective

Tocharian, which belongs to the Indo-European language family and which is attested furthestmost to the east, shows phonological, morphological and lexical features that are considered to be typical for the “Western” type of Indo-European languages.²⁰ Red-haired and blue-eyed figures depicted in mural paintings in the grottoes around Kucha and Turfan in combination with findings of red-haired mummies in the area around Loulan gave rise to interpretations in early scholarship that Tocharian was closely related to the Celtic languages – speculations unsubstantiated by further linguistic evidence.

Tocharian is attested in two varieties that are too different to be mere dialects,²¹ namely Tocharian A (also called “East Tocharian” or “Agnian”, TA) and Tocharian B (“West Tocharian” or “Kuchean”, TB), with the bulk of manuscripts dating from the 6th to the 8th century AD. Radiocarbon dating of a selection of manuscripts preserved in the State Library in Berlin suggests a wider time frame, the earliest manuscripts probably dating back to the 4th or 5th century AD and the latest ones to the 11th or 12th.²² Tocharian A, probably once spoken in and around the kingdoms of Agni and Turfan, is attested in documents from Turfan (Xočo), Qarašahr (Šorčuq, the ancient Agni), Murtuq and Bezäklik. Tocharian B, the language of the Kuchean kingdom, is attested in manuscripts found mainly in and around Kucha (with Ming Öy Qizil, Subaši and Qumtura) but also in the places where East Tocharian material has been found (cf. Map 1). Most of the documents are rather fragmentary, and with the exception of one Manichean hymn in TB, nearly all the material is Buddhist in content or is at least “coloured by Buddhism”.

Status of the Tocharian languages

The concurrent spoken codes in the Kucha and Turfan areas included, among others, the Middle Iranian languages Sogdian, Khotanese and earlier on also Bactrian, as well as Old Turkic (Uighur), Chinese, and Middle Indian Prakrit (Gāndhārī, Kucha Prakrit). All of the above-mentioned languages existed also as written codes, and to these (Buddhist) Sanskrit can be added.

In the domain of religious (Buddhist) literature and teaching, both of the

19 Cf. Sims-Williams & Hamilton 1990 and Yoshida 2009.

20 Cf. Pinault 2002, 244–245.

21 Lane 1966; Pinault 2002, 245; for a discussion see Peyrot 2008, 15–17. Westtocharian interlinear glosses in East Tocharian manuscripts indicate that the two languages were not mutually understandable.

22 Tamai 2005; for a discussion see also Peyrot 2008, 201–214.

Tocharian varieties can be assumed to have been prestigious codes in and around Kucha and Turfan, not only among Tocharians themselves but also among speakers of Old Turkic. This is suggested by Uighur interlinear glosses and Turkic names in colophons of Tocharian Buddhist documents, which reveal that Uighur speakers both used Tocharian manuscripts and commissioned and donated their copying. Tocharian – besides Sogdian and Chinese – played an important role in Uighur Buddhism.²³ Uighur Buddhist texts were translated from Tocharian (again explicitly stated in colophons, e.g. the above-mentioned *Maitrisimit*), and a major part of the Uighur Buddhist technical terminology was not copied directly from Sanskrit/Prakrit into Turkic, but rather – as revealed by typical phonetic adaptations – through Tocharian mediation.²⁴

Tocharian metre names and lexical copies attested in Tumshuq Saka documents indicate that (West) Tocharian was of high prestige even among the speakers of the Middle Iranian Saka language of Tumshuq, situated to the west of Kucha.²⁵ Less clear and probably much more complex are the interactions and relations of Tocharian with (Middle Iranian) Sogdian. Lexical copies from Sogdian into Tocharian suggest Sogdian to be the dominating code. But as Yoshida points out, some Sogdian Buddhist terms are copied from Sanskrit through Tocharian,²⁶ and at least in one known case the scribe of a Sogdian document claims that his text has been translated from Tocharian.²⁷ “Tocharianizing”²⁸ orthography in a medical bilingual Sanskrit-Sogdian text, one of very few Sogdian documents written in Brāhmī script, further complicates the picture. Is it just a question of orthography, and who in this case is the writer of such a document? Is it a Sogdian speaker with Tocharian orthography as part of his standard written code? Or is it a Tocharian speaker writing a bilingual Sanskrit-Sogdian document inserting orthographic (or phonetic) features of his own language into the manuscript? Or could the writer be a multilingual (or rather “multiliteral”) Uighur with both Tocharian and Sogdian as written codes? Taking into consideration the close contact of Sogdians and Uighurs on the one hand and Tocharians and Uighurs on the other, and the fact that Uighurs wrote and copied both Sogdian and Tocharian manuscripts,²⁹ this does not seem impossible. Further research on the interrelations of Tocharian, Sogdian and Uighur, both as written and as spoken codes, is urgently desired.³⁰

23 Different hypotheses about the role the Tocharians and Sogdians, respectively, played in the spread of Buddhism among the Uighurs have been brought forward, cf. Tremblay 2007, 108–114 with references to Laut, Moriyasu and v. Gabain. See also Yoshida 2008a, 325–358

24 Tremblay 2007, 109; cf. also Winter, 1984, 19 and Laut 1986, 120–142.

25 Emmerick 1989, 228–229; cf. also Schmidt 1988, 313–314; 2001b, 301.

26 Yoshida 2008a, 339–340.

27 Sims-Williams 1983, 138; Yoshida 2008a, 338 fn.16 with references.

28 Maue & Sims-Williams 1991, 492 with fn. 39, 40 and 493 with fn. 57.

29 For Uighurs as writers of Sogdian manuscripts see Yoshida 2008a, 341–344.

30 Cf. Yoshida 2008b, 55. For the complex question of the development and chronology of the different variants of the Brāhmī script see Sander 1968, 184–188; 1986, 164 and Maue 1996, XVIII–XIX

Domains of use and internal variation

The situation of Tocharian A is somewhat unclear. Since only canonical and non-canonical Buddhist literature is attested, and because of the lack of linguistic variation and the uniformity of the texts transmitted, it has been assumed that Tocharian A was no longer a spoken language at the time the manuscripts were written or copied.³¹ This is supported by the observation that there are West Tocharian glosses in an East Tocharian manuscript (THT 1027 = TA 394³²), but not vice versa. East Tocharian glosses in Sanskrit manuscripts,³³ one medical fragment³⁴ and two unpublished small fragments of a monastery record written in TA,³⁵ lead to the claim that TA was a spoken language after all.³⁶ Further research is needed here, but for now Tocharian A can be described as a highly standardized written code used for religious purposes, both by Turkic speakers and West Tocharians. The non-literary traces of Tocharian A, colophones which appear at the end of individual sections of *akṣara* charts (syllabaries) attested in THT 605 and THT 1128, and which contain short phrases like “this is the third art (section?)”, “these arts (sections?) were donated as a gift by Toṅkitsā” etc., do not contradict this picture: both the writing and the donating of manuscripts constitute religious acts.

Tocharian B, on the other hand, displays considerable linguistic variation. It is attested in religious and profane texts, and different chronological stages (Archaic, Classical, and Late) as well as different registers (literary and colloquial) can be distinguished.³⁷ Apart from canonical and non-canonical Buddhist literature,³⁸ administrative and economic texts, medical and grammatical treatises, graffiti, caravan passes (“laissez-passer de caravans”) and private and business letters are attested.³⁹ Religious literary documents were found both in the Kucha and the Turfan area, whereas non-religious, non-literary documents were restricted to the Kucha region. Kucha seems to have been the original home of West Tocharian, which was then spread to the east with Buddhist missionary activities, probably during the seventh century AD.⁴⁰ According to Peyrot, both a spoken and a written variety of West Tocharian were imported to the Turfan region, and it can be shown that even the West Tocharian substandard colloquial code secondarily developed into a literary norm in Turfan later on.⁴¹

Variation is not only revealed in the West Tocharian language, but also in the script and the materials used to write it down. Different varieties of Brāhmī are

31 Sieg & Siegling 1921: IV–V; Winter 1963, 243ff. (= 1984, 327ff.); Peyrot 2008, 16–17 with references.

32 The same manuscript contains also Uighur glosses. Both the West Tocharian and the Uighur glosses seem to be written by the same hand, probably by an Uighur speaker, cf. Winter 1963, 242–243; Peyrot 2008, 154.

33 Malzahn 2007a, 290–291 with fn.48; for an overview see Malzahn 2007b, 301–319.

34 Pinault 2007, 180 fn. 19.

35 Malzahn 2007a, 290 fn. 48.

36 Schmidt 1983a, 279; Pinault 2007, 180 fn. 19; Malzahn 2007a, 290 fn. 48.

37 For an overview and discussion on the interrelations of the different varieties of Tocharian B see Peyrot 2008, chapter 4. Peyrot takes into account the earlier works of Winter, Lane, Schmidt and Stumpf.

38 Schaefer 2009, 288–289.

39 Cf. e.g. Pinault 1987; 1998; Schmidt 2001a.

40 Peyrot 2008, 193, citing Lévi 1913; Schmidt 1986a, 636; Stumpf 1990, 150; Peyrot 2008, 206.

41 Peyrot 2008, 206.

used for different purposes: religious (Buddhist) texts are written with a reed pen in a formal script on paper or birch bark in the traditional oblong Indian *pustaka* (“Poṭhi”) format, whereas monastery accounts and other administrative/economic texts are written in a non-formal, cursive variant of Brāhmī (“Klosterschrift”), the scribes then using brushes on Chinese paper scrolls. Wooden tablets, birch bark and cloth are also used for commercial and administrative texts. Some of the commercial documents, dealing with the selling and buying of wine from the Kucha area, are bilingual, with (Middle Indian) Prākṛit written in Kharoṣṭhī on the one side, and West Tocharian written in Brāhmī on the other.⁴²

Concurrent codes and language contact

Traces of several concurrent codes can be seen in the Tocharian lexicon, reflecting clearly how the different codes were used in different domains. Some of the administrative economic terms (terms for measurements and money) – inserted globally (“loanwords”)⁴³ – are copied from Chinese.⁴⁴ Chinese administrative influence is also visible in the way the Tocharians signed their documents: small ink lines mark the breadth of the thumb (or a finger joint?) of the person verifying a document, accompanied by the term *kapci* and the name of the witness given in the genitive case, ‘finger (breadth) of X’. TB *kapci* is clearly a copy containing the Chinese word *zhi* ‘finger’; however, the linguistic details are not fully understood.⁴⁵

Lexical copies from different Iranian languages reflect different chronological stages as well as different areas and domains of contact.⁴⁶ The oldest layer of copies, inserted before the separation of the two Tocharian varieties, comes from an Old Iranian language (Old Sakan?)⁴⁷ and contains mainly military terminology: TB *tsain* ‘(kind of) weapon’, *kertte* ‘sword’, TA *porat*, TB *peret* ‘axe’, TA *ratāk*, TB *retke* ‘army’ etc. Copies from the Middle Iranian languages Bactrian, Sogdian, Khotanese and Parthian again contain military but also administrative and economic terminology, reflecting political and military domination as well as commerce. Copies of (Indian) Buddhist terms with typical Iranian phonetic adaptations reveal the role that the Iranians played in the spread of Buddhism in Central Asia.⁴⁸ Of the Middle Iranian stratum, copies from Bactrian are the oldest, and most of them seem to have come into Tocharian after the split into the two varieties.

From Middle Iranian, namely Bactrian or Sogdian, not only global lexical but

42 Cf. Schmidt 2001a, 7–36.

43 To describe the different phenomena of language contact, Lars Johanson’s code copying model is followed here, cf. Johanson 2002, 8–18. Entities copied entirely, i.e. as a block of material, combinational, semantic and frequential structural properties are called “global copies”. Copies of only selected structural properties of a block are called “selective”.

44 For a list of Chinese lexical copies, cf. Lubotsky & Starostin 2003, 262–265. Cf. also Grenet & Pinault 1998, 1016–1018; Pinault 2003, 47–49.

45 For the realia, see Kumamoto 1987, 151–154 and Rong 2005, 125; Cf. also Lubotsky & Starostin 2003, 262 fn. 5 with refs.

46 Winter 1971; Schwartz 1974; Isebaert 1980; Pinault 2002, Tremblay 2005.

47 Schwarz 1974, 409; Pinault 2002, 245; Tremblay 2005, 422–425; see also Sims-Williams 2002, 239.

48 Tremblay 2001, 24–27 with fns; 2007. For a chronology of the copies from Iranian and Indo-Aryan languages see Pinault 2002, 245; Tremblay 2005.

also copying of suffixes is attested, as in the case of the productive feminine suffix West and East Tocharian *-āñc* that was copied from Sogdian *-²nc* or Bactrian *-avζo*.⁴⁹

The bulk of lexical copies, however, comes from Indo-Aryan (Indian) languages. Prakrit, Buddhist Hybrid Sanskrit and Sanskrit are the codes for the domain of religion, scholarship and medicine, Prakrit also for administration and commerce. Interlineary glosses in Sanskrit manuscripts, and Sanskrit documents with characteristic mistakes, prove that Tocharians used, wrote and copied Sanskrit texts, but they also translated and transformed them. On the basis of the Buddhist texts in Sanskrit a Tocharian literary code is formed, the bilingual metrical texts bearing witness to this creative process.⁵⁰

Not all the items in the core terminology of Buddhism in the Tocharian lexicon are global copies ("loanwords") from Sanskrit or Prakrit; some of the central terms are selective ones ("loan translations, loan formations"), and interestingly, in a number of cases they are different in the two Tocharian languages. For instance, of the key term skt. *dharma* 'law, righteousness; substance, factor, (Buddhist) religion etc.' only the wide range of semantic properties is copied into the two Tocharian codes (TA *mārkampal*, TB *pelaikne*), the terms themselves being genuinely Tocharian. The same holds true for skt. *satya* 'truth' (TA *kārme* vs. TB *emprem*), skt. *duḥka-* 'suffering' (TA *klop* vs. TB *lakle*), skt. *punya-* 'merit' (TA *pñi* vs. TB *yārpo*) and skt. *karman-* 'action' (TA *lyalpu* vs. TB *yāmor*). This provides us with valuable information on chronology: the split into the two languages seems to have been completed by the time the Tocharians became Buddhists.

Phonological adaptations of lexical copies reveal Middle Indian or Middle Iranian mediation of much of the Sanskrit Buddhist terminology, and some of these copies even give us a rare glimpse into phonetic features of Tocharian: TB *spharir* 'jewel' (< Mind. **sphāḍira-* < **sphāḍiya-* < Sanskr. *sphāṭika-*) is copied from Sanskrit through Middle Indian (Prakrit) mediation. The substitution of the Indian retroflex *ṭ/ḍ* with an *r* in Tocharian (also seen in TB *prahār* for Sanskrit *prahāṇa*.⁵¹) only makes sense if Tocharians pronounced their *r* apico-alveolarly, that is, with the tip of the tongue against the upper gum.

Names of monks copied from Sanskrit with different grades of phonetic adaptation (*Jñānakupte* < Skt. *Jñānagupta*, TB *Saṅketava* < Skt. *Saṅghadeva*) confirm the important role of Sanskrit as one of the languages of Buddhism in the urban centres of Central Asia. The names of Tocharian kings on caravan passes, partly adapted global copies from Sanskrit (TB *Swarnatepe* < Skt. *Suvarṇadeva*) and partly selective ones (TB *yaṣṣe pyāpyo* 'golden' + 'flower' copied from Skt. *Suvarṇapuṣpa* 'gold-flower'), indicate that the rulers of Kucha in the beginning of the 7th century AD were Buddhists.

Tocharian being high-status codes in Kucha and Turfan at least until around 900 AD, no lexical copies from Old Turkic into Tocharian can be expected, and hardly any have been found.⁵² A closer look at Tocharian morphology and syntax, however, reveals impact that goes far beyond lexical copying. Both East and West Tocharian developed a two-storey case system, with so-called secondary cases inflecting agglutinatively, that is to say, in a manner typical for Turkic but not for Indo-European languages. Agglutination is considered to be one of the

49 For a discussion see Tremblay 2005, 436; see also Schaefer 1997, 171–172.

50 Thomas 1989; Schmidt 1983b; 2004; Pinault 2002, 271–279.

51 Schaefer (forthcoming).

52 But see Lubotsky/Starostin 2003.

“attractive” features of the Turkic languages,⁵³ and here we probably have a first case of code copying where speakers of the dominated code, Old Turkic, inserted (“imposed”) a Turkic pattern into the dominating code, Tocharian, where it then continued to operate as substratum influence. Imposition of an attractive Turkic pattern and subsequent substratum influence might be the explanation for another striking feature of Tocharian, namely the extensive use of converb⁵⁴ constructions as a clause-combining strategy.⁵⁵ Not only “absolutives” (ablatives of verbal abstracts), but also “middle participles” (ending in TA *-mām*, TB *-(e)mane*) function as converbs in both the Tocharian varieties. With their particular semantic, morphological and syntactical properties, middle participles were considered as “deviating” in earlier studies: they almost always appear uninflected in TA and always uninflected in TB; they do not participate in the general semantics of the middle⁵⁶ and are used more in a “subordinating” function than in an attributive one.⁵⁷ A closer look at the texts reveals that they are mostly used in a sentence-adverbial and a so-called chaining or plot-propulsing function.⁵⁸ In other words, they are used in functions typical for converbs in the Asian languages and especially in the Turkic.⁵⁹ Here again one could assume that speakers of Old Turkic, probably bilingual ones, imposed a syntactic pattern of their own code into the prestigious one, Tocharian, using Tocharian morphology. Under the assumption that “*-māne/-mām-*” formations fossilized and eventually became re-analysed as converbs, both their morphology and their semantics find an explanation. The fact that “*-māne/-mām-*” formations are built from roots otherwise inflected only actively (“activa tantum” like TA *nas* TB *nes* ‘to be’, TA/TB *i* ‘to go’, TB *nāsk* ‘to bathe’, TA/TB *länt* ‘to go out’, and TA *ske*, TB *skai* ‘to try to, to make an effort’), supports the assumption of a newly established category.

Such impact on the morphosyntactic system of a code presupposes sufficiently intense and close language contact, and it implies a considerable amount of bi- or multilingual speakers. In our case Turkic speakers imposed some of the features of their language into Tocharian. When and where that happened is unclear. Further research that attends to the chronology and different linguistic stages of the texts might give new insights.

By the end of the 8th or 9th century AD Tocharian seems to have ceased being a written code for the domain of religion, administration and economy in the city-states of Kucha and Turfan, as only a few Tocharian manuscripts are attested after the 9th century. That does not mean, however, that Tocharian also disappeared as a spoken code; it may well have been used as a means of oral communication far beyond that time.⁶⁰ Like the equally prestigious Sogdian, Tocharian disappeared and gave way to Turkic and/or Chinese. We do not know anything about the circumstances that made the urban dwellers abandon their language in the end, and – unlike in the case of Turco-Sogdian – we have no direct witness to the mixing of the codes. What we can see, however, is a fascinating example

53 Johanson 2002, 45.

54 For definition and terminological matters, see Haspelmath 1995, 1–55.

55 Schaefer, Converbs in Tocharian (in prep.).

56 Schmidt 1969, XIII fn. 1.

57 Dietz 1981, 144.

58 Johanson 1995, 327–330; 1998, 65–66.

59 Johanson 2002; Masica 1990, 398–399 (with reference to Masica 1976).

60 Aydemir 2008.

of a language being formed, changed and adapted within urban settings of an extraordinary cultural and linguistic diversity.

A deeper study on the linguistic ecology of the oasis cities in Central Asia that includes evidence from all the languages involved is an urgent desideratum. Of special interest in that context are the interrelations of Tocharian, Sogdian and Uighur and the bi- or multilingualism and “multi-literacy” of their speakers.⁶¹ The task is not only to gain understanding of mechanisms of creative linguistic processes that determine the relations between different codes, but also to see if it is possible to relate types of contact phenomena to specific types of contact situations, in particular urban ones. In order to achieve these goals cooperation is needed with specialists from different philologies (Iranian studies, Indology, Chinese, Turkic languages), linguists specializing in language ecology and socio-linguistics, but also historians, anthropologists and archaeologists.

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61 Cf. also Yoshida 2008a.

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19. Is There an “Urban Mind” in Balochi Literature?

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ABSTRACT

The purpose of this chapter is to compare themes in Balochi written literature with those found in Balochi oral literature in search for an “urban mind”. The Balochi language is spoken in south-western Pakistan and south-eastern Iran, as well as by smaller populations outside Balochistan proper. Various estimates give at hand that there may be between 8 and 10 million speakers of Balochi, or even more.

Childe presents a number of criteria for urbanism which are used in this chapter to determine whether there is an urban mind in Balochi oral and written literature. The five written texts examined in this study all date from the 1950s and onwards, whereas the five oral texts are undated but assumed to be of a much earlier date than the written texts.

The study shows that in the oral narratives the urban setting is put forth as an ideal. To become a king or the king’s son-in-law or the foremost merchant in the world is what constitutes true success, and not, for example, to become the richest farmer or cattle owner. This urban mind is only present in a fantasy world, however, and in the written literature there is a totally different and this time realistic setting for the stories. Here the scene is not a world where wishes come true, but the harsh reality of Balochistan. Urbanism as an ideal is absent in these stories, and even though urban phenomena are mentioned they are not crucial in any of the written stories.

Introduction

Following Childe’s criteria for urbanism,¹ writing is here regarded as one of the characteristics of urbanism. Accordingly, an investigation of written literature together with non-written (oral) literature can be rewarding in the search for differences between an “urban mind” and a “rural mind”. The purpose of the present chapter is to compare themes in Balochi written literature with those found in Balochi oral literature. Five oral tales and five short stories will be examined in this study, and a number of criteria will be used in order to determine what can be labeled as “urban” in these texts.

In his work *Orality and Literacy*, Ong argues for a dichotomy between oral-

1 Childe 1950, 9–16.

ity and literacy and rejects the concept of “oral literature”.² Utas claims that such a model is flawed in that it seems to assume the language of oral literature is the same as that of free speech but different from that of written discourse. Utas argues that, “the language of oral and written literature is more akin, by being normalized, conventionalized and consciously shaped to be remembered”.³ Following Utas’ definition, both oral and written narratives will here be defined as literature. Before the actual analysis, I will provide a short overview of Balochistan and the Baloch people.

Balochistan and the Baloch, an overview

Balochistan, the land of the Baloch, is divided between Iran and Pakistan by the so-called Goldsmid Line, a border demarcation which was the result of a border commission headed by the British general Goldsmid in 1870–1872.⁴ Exactly when the Baloch arrived in their present habitat is hard to determine. Marco Polo reports that this area, which he called Kesmacoran, had its own ruler and that the people “lived by commerce as much as agriculture, trading both overland and by sea in all directions”.⁵ Spooner holds that the Balochi immigration into the coastal area, known as Makrān, started in the 11th century AD and intensified in the 13th century, when Turkic tribes started invading the Iranian plateau from the east.

According to the epic tradition of the Baloch themselves, they are of Arabic origin and migrated from Aleppo in Syria after the Battle of Karbala in AD 680. Although the majority of the Baloch today are Sunni Muslims, tradition has it that in the Battle of Karbala they fought on the side of the Shiite Imam and martyr Hussein against his enemy, the Umayyad caliph Yazid.⁶ This is likely an attempt to establish a “true Islamic” genealogy for the Baloch.

It is probable that the original habitat of at least a core group of the Baloch was in the north-western part of the Iranian linguistic area and that they migrated south-eastwards under pressure from the Arabic and Turkic invasions of the Iranian plateau from the mid-7th century AD onwards. The main evidence supporting this theory is linguistic, namely the close relation between Balochi and other languages traditionally classified as north-west Iranian, such as Kurdish, Gilaki, Mazandarani and Talyshi. Another piece of evidence is the fact that Arab historians from the 9th and 10th centuries AD associate the Baloch with the geographical regions of Kerman, Khorasan, Sistan and Makran in present-day eastern Iran.⁷ It also appears that tribes and groups of various linguistic affiliations, including Indo-European (e.g. Pashtun), Semitic, Dravidic (Brahui), Turkic, Bantu and others, have been incorporated into the very heterogeneous ethnic group today known as the Baloch.⁸

The Balochi language is spoken in the province of Balochistan in south-western Pakistan, and in the province of Sistan and Balochistan in south-eastern

2 Ong 1982, 11.

3 Utas 2006, 209.

4 Hopkins 2007.

5 Spooner 1989, 609.

6 Dames 1907/I, 1–2.

7 Spooner 1989, 606.

8 See e.g. Spooner 1989, 599–600, 606–607; Swidler 2008, 366; Korn 2005, 43–51.

Iran.⁹ It is also spoken by smaller populations in Punjab and Sindh and by a large number of people in Karachi, as well as by Baloch who have settled in the north-eastern provinces of Iran, including Khorasan and Golestan. It is also the language of smaller communities in Afghanistan (particularly in the province of Nimruz), in the Gulf States (especially in Oman and the United Arab Emirates), in the Mari region of Turkmenistan, in India, in East Africa, and nowadays also in North America, Europe and Australia.

It is difficult to estimate the total number of Balochi speakers. Many Baloch, particularly in areas bordering Indian languages (in Punjab and Sindh) and Persian (in the western parts of the Balochi-speaking areas in Iran and in Khorasan and Golestan), identify themselves as Baloch but no longer speak the language. The same is true of many Baloch in East Africa and on the Arabian Peninsula, particularly after having lived there for generations. The Baloch in Turkmenistan, however, have retained their language well, mainly owing to the fact that they have maintained a traditional lifestyle of agriculture and pastoralism and have, on the whole, a low level of education.

Another reason that it is difficult to give any certain figures for Balochi speakers is that first and second languages are not always recorded in censuses carried out in the countries where Balochi is spoken. A serious attempt at estimating the total number of Balochi speakers was done in the mid-1980s¹⁰ with about 5 million as an approximate grand total. This figure has been questioned by some Baloch as unreasonably low. There is, indeed, a tendency on the part of central authorities to underestimate the number of members of ethnic minorities, and this may show up in any figures based on official statistics. The total number of speakers of Balochi, as estimated in the *Ethnologue*¹¹ (divided between Eastern, Southern and Western Balochi speakers) amounts to 7 million. In view of all this, and the fact that the birth rate in the province of Sistan and Balochistan in Iran is the highest in the country, and in Pakistan about average, the total number of Balochi speakers at the time of writing (2010) probably amounts to between 8 and 10 million, or even more.

Balochi is neither an official language nor a language of education in any of the countries where it is spoken. This is reflected, for example, in the lack of a standard written norm for Balochi.¹² There is also a dispute about which dialect, or dialects, ought to be the basis of a literary language. On the whole, writing and reading Balochi is at the moment an exclusive activity carried out by a small number of persons belonging to the Balochi literary elite, mainly in Pakistan. Thus, Balochi is, as a minority language, largely restricted to traditional and informal domains such as the family, the neighbourhood, and traditional occupations (e.g. pastoralism and agriculture). A career outside these traditional sectors is linked to a great extent to higher education and a good command of the national language. Efforts to preserve and promote the Balochi language are mainly of an unofficial character and based on private initiatives. However, there is a growing concern among the Baloch that their language may well be lost within a few generations if it does not develop a written standard.

The Baloch have traditionally sustained themselves on pastoral nomadism and/or seasonal agriculture and date cultivation, and to some degree on fishing.

9 The official spelling in Iran is Sistan va Baluchestan (see Fig. 1).

10 Jahani 1989, 91–97.

11 www.ethnologue.com. These figures are from 1998 or earlier.

12 See Jahani 1989.

Fishing is limited to the shores of the Indian Ocean, that is, to the southernmost coastal area of Balochistan. Agriculture and date cultivation prevail in the lowlands of southern Balochistan as well as in oases and along rivers, for example in Iranian Sarawan and Pakistani Kharan. Further to the north, the main occupation has traditionally been pastoral nomadism.

The tribal structure has been both a uniting and a separating factor among free-born Baloch in all of Balochistan. It has been easy for originally non-Baloch tribes and clans to associate with and be incorporated into the Balochi tribal system,¹³ and the unity within the tribe has also traditionally been very strong. However, tribal loyalties are often felt to hamper a nationalist movement, and nowadays many intellectual Baloch try to promote the replacement of tribal loyalties with a national Balochi loyalty. This raises the question of how to delimitate the Baloch *ethnie*.¹⁴ For instance, what is the position of persons who no longer speak Balochi, of larger groups of Baloch living outside Balochistan,¹⁵ of non-Baloch living in Balochistan,¹⁶ of Baloch professing another religion than Sunni Islam,¹⁷ and of sub-tribal groups and former slaves, who are not normally regarded as Baloch?¹⁸

Three of the reasons that the Baloch are found over such a large area – from Turkmenistan to Tanzania and from Iran to India, and also in Australia, Europe and North America – are the natural and political conditions of Balochistan and the fact that the Baloch were often recruited as soldiers owing to their reputation of bravery.

Balochistan is situated at the crossroads between east and west, north and south. From Alexander the Great's time onwards, many conquerors have passed through this region. The Sea of Oman also links Balochistan to the Arabian Peninsula and eastern Africa. These geo-political conditions of Balochistan have caused a considerable amount of migration.

The main natural reason for migration from Balochistan is the long droughts that often plague this area. In the late 19th century there are reports of severe droughts, which caused many Baloch to migrate northwards to Khorasan and Golestan in Iran, to northern Afghanistan and all the way to Turkmenistan in search of pasture for their herds.¹⁹ Some of the Baloch also migrated westwards, to the Iranian provinces of Kerman, Hormozgan, and Fars, where they still speak Baloch and are known as Koroshi.²⁰ A long and severe drought in Iranian Balochistan between 1997 and 2004 forced many Baloch to sell their herds or abandon their agriculture and look for other occupations, such as border trade, which is one of the main pillars of the economy in Balochistan today. Many also moved out of the province.

Another migration was when a number of Baloch were moved by force to Australia by the British colonial government during the second half of the 19th century to facilitate the exploration of the Australian interior. This could only be

13 See e.g. Titus 1998, 668.

14 See Smith 1986, 21.

15 See e.g. Al Ameer 2003; Axenov 2003.

16 See e.g. Yadegari 2008; Afrakhteh 2008.

17 See e.g. Badalkhan 2008.

18 See e.g. Yadegari 2008.

19 Axenov 2000, 72.

20 Nourzaei 1388.



Fig. 1. Balochistan and adjacent regions. Sincere thanks to Agnes Korn and Christian Rammer, Frankfurt am Main, for producing this map.

done by means of camels, and the Baloch were among the ethnic groups in British India who kept this animal.²¹

Political changes that have caused migrations out of Balochistan include attempts on the part of the central Iranian government to subdue local Baloch rulers and penetrate the region; this occurred in the 1850s and in 1928 during the third year of Reza Shah's rule. Particularly after the second invasion, many Baloch moved to Karachi in British India. Also in the 1950s, a number of Iranian Baloch sought refuge in Oman after revolting against Mohammad Reza Shah.²² Many Baloch on the Arabian Peninsula and in East Africa have been recruited as soldiers, particularly in the Omani army.²³ After the Islamic Revolution in 1979, a small number of educated young Baloch sought refuge outside Iran, mainly in Pakistan and Europe.

It is interesting to note that there are two different words in Balochi to define pastoral nomads and settled agriculturalists. In former times, it was only the Baloch pastoral nomads that were known by the term "Baloch", whereas the agriculturalists were called "townspeople" (Bal. *šahrī*).²⁴ This latter term suggests that the village where the agriculturalists lived was indeed some sort of urban centre.

The main political centre of the Baloch between 1666 and 1947 was Kalat in present-day Pakistan (Fig. 1). This was the centre of the Baloch-Brahui Ahmadzai

21 Oral communication, Amin Goshti, Canberra, Australia.

22 Al Ameer 2003, 239.

23 See Lodhi 2000; Al Ameer 2003; Collett 1986.

24 See e.g. Baranzehi 2003, 79; Yadegari 2008, 254; Noraiee 2008, 346.

Khans, who ruled over a considerable part of Balochistan. The town of Kalat was described in the early 19th century as having more than 3500 houses altogether (within and outside the wall surrounding the settlement) and was thus an urban milieu of some repute. Many of the shopkeepers were Hindus.²⁵

Quetta (from the Pashto name for fort), the mainly Pashtun-inhabited capital of the province of Balochistan in Pakistan, has a very low percentage of Balochi population and is therefore less important historically to urbanism among the Baloch than another fort and urban centre, namely that of Sibi. According to the Balochi account of history, Sibi was the place where one of the early Baloch rulers, Mir Chakar, known from classical heroic ballads, established the capital of the Rind-Lashari Balochi confederacy in the late 15th century.²⁶ Some other early urban centres in Balochistan that can be mentioned are Bampur, Pahra (now Iranshahr), Sarawan and Chabahar in present-day Iran, and Bela, Gwadar, Kharan and Khuzdar in present-day Pakistan.

It is hard to speak of a written Balochi literature before the 1950s. It is, however, highly likely that poems in Balochi were indeed written down by the poets themselves or by people around them. Strong indications that there might have been such early written records of Balochi literature are found in a British colonial document: "A considerable body of literature exists in Western Baluchi and many of the leading men keep books, known as *daftar*, in which their favourite ballads are recorded in the Persian character."²⁷ There were thus literate Baloch who were educated in traditional Islamic schools, where they were taught, for example, Arabic and Persian. It was thus natural for such persons to use the Arabic-Persian script for writing Balochi. Balochi was, however, never used as the official language at the court of Baloch rulers. The language of the administration in Kalat, for example, was initially Persian and later English.²⁸

During the British period a considerable amount of publication of Balochi oral literature took place. More than anyone else, the person associated with this activity is the British civil servant M. Longworth Dames. The purpose of this effort was mainly to provide material for the British officials to learn Balochi. Also parts of the Bible were translated into Balochi in the late 19th and early 20th centuries, and, possibly in response to this, the first translation of the Quran appeared in the early 20th century.²⁹ However, only after the independence of Pakistan in 1947 do we find books in Balochi published by the Baloch themselves. The readership is so far limited to a small literary elite, comprising a few hundred people at best. This limited readership naturally puts a heavy mental and financial constraint on anyone wishing to publish his or her literary production in Balochi.

Criteria for urbanism

Gordon Childe, held by Smith³⁰ to be "the most influential archaeologist of the twentieth century", presented the following criteria for urbanism:³¹

25 Swidler 2008, 369, 371.

26 Hosseinbor 2000, 38–39; Breseeg 2004, 140; see also Spooner 1989, 610.

27 *Baluchistan District Gazetteer Series* 1986 [1907], 81.

28 Jahani 2005, 153.

29 Jahani 1989, 24.

30 Smith 2009, 3.

31 Childe 1950, 9–16.

1. "In point of size the first cities must have been more extensive and more densely populated than any previous settlements, although considerably smaller than many villages today."³²
2. "In composition and function the urban population already differed from that of any village. Very likely indeed most citizens were still also peasants, harvesting the lands and waters adjacent to the city. But all cities must have accommodated in addition classes who did not themselves procure their own food...full-time specialist craftsmen, transport workers, merchants, officials and priests."³³
3. "Each primary producer paid over the tiny surplus he could wring from the soil with his still very limited technical equipment as tithe or tax to an imaginary deity or a divine king who thus concentrated the surplus."³⁴
4. "Truly monumental public buildings not only distinguish each known city from any village but also symbolize the concentration of the social surplus."³⁵
5. "[P]riests, civil and military leaders and officials absorbed a major share of the concentrated surplus and thus formed a 'ruling class.'"³⁶
6. "Writing"³⁷
7. "[T]he elaboration of exact and predictive sciences – arithmetic, geometry and astronomy."³⁸
8. "Other specialists, supported by the concentrated social surplus, gave a new direction to artistic expression."³⁹
9. "Regular 'foreign' trade over quite long distances was a feature of all early civilizations".⁴⁰
10. "[E]ven the earliest urban communities must have been held together by a sort of solidarity...Peasants, craftsmen, priests and rulers form a community, not only by reason of identity of language and belief, but also because each performs mutually complementary functions, needed for the well-being...of the whole."⁴¹

Following these criteria, and the added parameter of a monetary economy, I will now investigate whether there is an "urban mind" depicted in Balochi literature and, if so, whether it is found in both the oral and the written literature, that is, whether this "urban mind" is an old or a rather new phenomenon in Balochistan. At this point it should be noted that the "urban mind" under study here has nothing to do with modernity. Totally different criteria would be needed for the study of modernity, but this is outside the scope of the present chapter.

The written texts examined in this study all date from the 1950s and onwards, whereas the oral texts are undated. Since common themes in the oral literature, almost identical stories in fact, are found among the Baloch who migrated westwards to Fars as well as those who went north-eastwards to Turkmenistan, the oral literature is here assumed to be of a much earlier date than the written

32 Childe 1950, 9.

33 Childe 1950, 11.

34 Childe 1950, 11.

35 Childe 1950, 12.

36 Childe 1950, 12–13.

37 Childe 1950, 14.

38 Childe 1950, 14.

39 Childe 1950, 15.

40 Childe 1950, 15.

41 Childe 1950, 16.

texts. The texts analysed consist of five traditional tales and five short stories. The texts will be summarised in search for criteria of an “urban mind”.

Summary of the texts with notes on criteria of an “urban mind”⁴²

1. Oral texts

a. Mister Five-Slayer

The first text is a story of a poor man who decides to leave the town where he is living and move to another kingdom. There he happens to become the chief minister of the king by claiming he can kill five tigers all at once, which of course he has never done. His duty as the chief minister is to ward off any dangers to the king and his rule. As soon as he is given a new mission, he returns home and starts beating his wife, who had once mockingly called him “Mister Five-Slayer”, something which he had taken as a pretext for his claim at the king’s court. By pure luck and the skill of his wife, he successfully fights tigers and thieves, and attacks the king’s enemies. On one of his missions, he dresses up as a businessman in order to fight robbers. Finally he receives half the kingdom.

In this text a more densely populated place, a “town” (Bal. *šahr*), is contrasted with the “village” (Bal. *halk*) that Mister Five-Slayer came from. There is also mention of “shopkeepers” (Bal. *dukkāndār*, *bakkāl*) and “construction workers” (Bal. *hunarkār*, *ṭāhēnōk*). As for monumental buildings, Mister Five-Slayer builds himself a “palace” (Bal. *mārī*), and the place where the king and his ministers gather is described as a “court” (Bal. *dīwān*). Regarding the ruling class, in addition to the “king” (Bal. *bādšāh*) there is mention of his “ministers and deputies” (Bal. *wazīr u wakīl*) and his “soldiers” (Bal. *sipāhī*). There is also reference to a “war” (Bal. *mir u ǰang*) between this king and another king. The climax of the story comes when Mister Five-Slayer is transformed from being “poor and destitute” (Bal. *bēwass u nēzgār*) into “lord of half the kingdom” (Bal. *bādšāhīay nēmagay wāǰā*).

b. Moses and the starving man

The second story is about Moses, in this Islamic context given the title of a “prophet”, and a destitute and starving man. The man asks Moses to intercede for him and plead with God to give him everything that has been provided for his whole lifetime in one go, so that he can fill his stomach if only once. God does so, and since the poor man cannot eat all the food he gives some away as alms. God rewards him, and at the end of the story the man becomes the foremost businessman in the whole world.

The very first criterion of urbanism found in this text is that Moses is seen as a mediator between God and man, the same role a priest has. Another notion associated with urbanism is giving alms to the poor “for God’s sake” (Bal. *bi rāh-i xudā*). An indirect reference to tradesmen is also found in that the poor man, upon receiving his allocation, goes to the “marketplace” (Bal. *bāzār*) to buy food. There is thus a monetary economy in this text. A more direct reference to

42 Bibliographical information about the texts is found at the end of the chapter.

tradesmen is provided at the end of the story, where the “starving fellow” (Bal. *gužnagēn bandag*) becomes “the tradesman of the world” (Bal. *tajjār-i jahān*), a transformation similar to the one in the first text. This also bears witness to an awareness of long-distance trade.

c. The little lizard-girl

Story number three is that of a childless couple, a poor man and his wife. After the intervention of a man with supernatural powers, the wife gives birth, not to a human child but to a lizard. This lizard proves to be a blessing, since she can change her appearance into different utensils and by doing so bring home dates, wheat, oil and other necessities. Only when she visits the school, which seems to be only for boys and thus a traditional religious school, does she get nothing. Eventually she manages to get hold of a merchant’s entire fortune and bring it to her parents.

References to urban concepts in this text are the presence of a “religious man endowed with supernatural powers” (Bal. *pīrpārsā*) and specialised craftsmen such as a “keeper of the storage” (Bal. *anbārčīn*), a “gardener” (Bal. *bāgpān*), a “blacksmith” (Bal. *āhinkār*), and a “merchant” (Bal. *bakkāl*) who has a “shop” (Bal. *dukkān*). We also meet the “king’s daughter and his minister’s daughter” (Bal. *bādšāh u wazīray jīnikk*). The “royal palace” (Bal. *bādšāhī māri*) is mentioned as well. In this text, there is also reference to education with the words “school” (Bal. *madrasag*), “reading” (Bal. *wānag*), “small blackboard for each pupil to write on” (Bal. *taxtī*), and “pen” (Bal. *kalam*). The climax of this story is when the poor parents become “rich” (Bal. *māldār u ganjdār*) after receiving the merchant’s entire fortune.

d. Goli and her husband

The fourth story is that of Goli, who treats her husband, Ahmad, so badly that he decides to throw her into a well. When he has second thoughts and tries to pull her out of the well, a dragon comes out instead of his wife. The dragon manages to get Ahmad married to the king’s daughter by twisting itself around her neck and only letting go on Ahmad’s order. When the dragon does the same with another princess, Ahmad is called to rescue her as well. The dragon had warned him, however, that if he comes to rescue more princesses, the dragon will eat him up. However, Ahmad manages to save this second princess by telling the dragon a lie, namely that Goli has escaped from the well and is looking for it. On hearing this, the dragon flees head over heels in order to escape falling into Goli’s hands.

In this story there is mention of a “town” (Bal. *šahr*), two “kings” (Bal. *šāh*), two “kings’ daughters” (Bal. *šāhey janek*), and a “court” (Bal. *maǰles*). There is also mention of “wise men” (Bal. *ālem*) who try to free the king’s daughter from the dragon, but in vain. The climax of the story is not when Ahmad becomes the “king’s son-in-law” (Bal. *šāhey dūmād*), although this is an important event, but rather when he manages to free the second princess despite the dragon’s warnings.

e. The Indian merchant and the Egyptian goldsmith’s daughter

The final story is about an Indian merchant who takes a wife from Egypt, but throws her into a well on the way back to India. Another caravan pulls her out and takes her back to Egypt. She does not tell her family the truth about her husband and what he did. He, on the other hand, goes back to India where he loses his fortune. Fate brings him back to Egypt as a beggar, where he again meets his

wife, who remains faithful to her husband even though he has been cruel to her. At the end of the story it becomes apparent that the merchant is the offspring of a slave and his wife the offspring of a prince, something which is then seen as the reason for their evil versus good deeds.

Already in the title of the story there is a tradesman, a “merchant” (Bal. *taĵĵār*) who does “business” (Bal. *taĵĵāratt*) between India and Egypt, and a craftsman, an Egyptian “goldsmith” (Bal. *zargar*). The Indian merchant is described as having a “caravan” (Bal. *kāpila*) and the Egyptian goldsmith has “wealth” (Bal. *sarmāya*). Other merchants also appear, and the person who takes the woman back to Egypt is to bring a written “receipt” (Bal. *rasīd*) from her father, a reference to written documentation. The Egyptian goldsmith lives in a “palace” (Bal. *kāx*). When the Indian merchant loses his fortune he goes begging to different “towns” (Bal. *šār*), and when he comes to Egypt and meets his wife he asks her, not knowing who she is, for “alms” (Bal. *xayrāt*) “for God’s sake” (Bal. *pa xudāay nāmā*). A “prince” (Bal. *šāzādag*) is also mentioned as the father of the girl in the story. The girl, who is of royal lineage, does the good deed of protecting her husband even though he has mistreated her. Note also the presence of long-distance trade (and begging) which brings the Indian merchant-beggar to Egypt, not only once but twice.

2. *Written texts*

a. *The inheritance*

The first story is that of a dying old woman named Granaz. At the start of the story, she is moaning in agony. She has raised five sons, but the first is dead, the second has left the country and abandoned her, the third has become a guerilla fighter in the mountains, the fourth is in prison, and only the fifth son, who seems to be somewhat disabled, is at her side. She used to be a strong woman, but is now totally destitute. At the end of the story she dies in this sad condition.

In this text, there are few references to what could be described as an urban mind. Granaz mentions a “fortress” (Bal. *kōḷā*) and a “prison” (Bal. *bandīxāna*), phenomena that are associated with the exercise of power. There is also reference to “religious people” (Bal. *pīr u fakīr*) who will only provide “amulets” (Bal. *čīṭ u tāyīt*) if they are well paid. There is no climax in this story of the kind found in the oral narratives.

b. *The evil-doer*

In the second story, a court report of a murder is given. Dawlat Khan has killed the wife of his brother, Muhabbat Khan, accusing her of having had an affair with a passer-by. Muhabbat Khan himself is a guest worker in Dubai and is about to return home for a vacation. As the story develops, it becomes clear that the woman was pregnant, and that it was in fact Dawlat Khan himself who had an affair with her. He committed the murder in order to conceal his guilt, but at the end of the story there is a report of a new murder. Muhabbat Khan has found out the whole truth and has killed his brother.

This text revolves around a court case, and there are references to an “investigation” (Bal. *taftīš*), “written reports” (Bal. *ripūrt*), “imprisonment” (Bal.

kayz u banday sazā), and the “crime branch” (Bal. *krāym brānc̣*). Once again there is no climax, and the story ends on a sad note.

c. Thunder

The third story tells of a long drought and a prediction during a ritual sacrifice that there will be heavy rain in the near future. The man who makes the sacrifice, Kuhda Shahsuwar, has a son, Kasim, who has joined the army in Muscat. Kasim sends a message with another soldier to say he is about to return, whereupon his father begins making preparations to marry off his son in order to get him to stay at home from now on. He sends a servant to meet his son at the port on the day of his return and to travel back home with him. When Kasim arrives at the port he decides to visit a friend on the way home, and he sends the servant in advance. The servant arrives safe and sound, but not Kasim, who is struck by lightning when he takes shelter under a tree as the long-awaited rain starts to pour down. His father loses his mind as a result of his son's death.

References to criteria of an urban mind in this text are the title of “village elder” (Bal. *kuhdā*) given to three people in the text, being a “soldier” (Bal. *sipāhī*) in the “army” (Bal. *pauj̣*), and the use of money, namely “Pakistani rupie” (Bal. *kalladār*).

d. Ormara 2030

The fourth story is set in the future, namely in 2030, and the location is the port of Ormara in Pakistani Balochistan. The main character is Balach, who is an old Baloch nationalist, a member of a nationalist party, and a poet. When the story opens, he is sitting and watching the sea. He sees people dressed in different kinds of clothes, even shorts and skirts, which are not common in Balochistan today. He compares the noisy crowd in the restaurant to the seabirds of old times. He is very lonely since his friends of old are all dead, and there is a heavy burden on his heart. Nobody speaks Balochi any more, and Balochi culture is about to be forgotten as well. Balach remembers how he had foreseen and warned against this situation in his days as an active politician, but nobody had taken him seriously enough to do something about the situation. Balach hears young people conversing in Urdu and English, then suddenly somebody speaking in Balochi. He turns around and finds that it is only a little beggar. The next day Balach's death is announced from the mosque, in Urdu rather than in Balochi.

In this text as well, there are some references to criteria of an urban mind. Balach is described as a writer of “poetry” (Bal. *šāhirī*) and as a “political figure” (Bal. *syāsī mardum*). There are also references to “political meetings” (Bal. *syāsī majlis u j̣alasah*) and to a monetary economy in the form of “Pakistani rupie” (Bal. *kalladār*). But once again, the urban mind is not a foreground theme, and the story ends in despair since there seems to be nobody left to care for the Balochi language and culture after the death of Balach.

e. Bitter

In the final story we meet Rahmat, a young and successful writer, who is frequently published in magazines. He is very well received by the headmaster when he returns to his former school, and he believes that it is thanks to his success as a writer. The headmaster wants to talk to him about something, so Rahmat stays on until the headmaster has finished his daily duties. Rahmat imagines that the headmaster, who is a well-educated man with two M.A.'s and one M.Ed., may

want to hear a poem of his, or maybe even ask for advice on writings of his own. As it turns out, the headmaster wants to discuss a totally different matter. Rahmat has an influential brother in Bahrain, and the headmaster needs this brother's help to find a suitable job for his own brother who is also in Bahrain.

The main criterion of an urban mind found in this text is that of writing. The whole milieu is a school where we meet the "headmaster" (Bal. *hiḍmaṣṭir*) and the "poet and writer" (Bal. *šāiru labzānt*). Mention is made of "literary magazines" (Bal. *labzānkī tāk*), "poetry and writings" (Bal. *šayr u nibištānk*), a "meeting for reciting poetry" (Bal. *šāirī dīwān*), "literary and other scientific work" (Bal. *labzānkī u diga ilmī kār*) a "school" (Bal. *iskūl*), "paper and files" (Bal. *kāgad u fāyl*), the "marketplace" (Bal. *bāzār*), a "secretary" (Bal. *munšī*), "university degrees" (M.A. and M.Ed.), and a "letter of introduction" (Bal. *pārī kāgad*).

Conclusions

Is there, then, an urban mind in Balochi oral and written literature? In the oral narratives the urban characteristics are very clearly put forth as an ideal. To become a king or the king's son-in-law or the foremost merchant in the world is what constitutes true success, and not, for example, to become the richest farmer or cattle owner. The presence of businessmen is more strongly felt than that of religious men in these stories; in other words, Mammon is given more attention than God in this cultural setting. It is thus clear that there is indeed an urban mind strongly present in these stories, but that an urban lifestyle exists only in a fantasy world and is something that one can dream about but probably never attain.

It is interesting to note that writing in the vernacular (i.e. Balochi) has not been a prerequisite for an urban mind and urban ideals. Further, in the pre-modern society with a mainly non-literate population, where the oral tales were created and retold, the urban life was presented as the successful life.

In the written literature the stories have a totally different setting, which is grounded in real life. Here the scene is not a dream world where wishes come true, but the harsh reality of Balochistan. In fact, all the short stories end on a pessimistic note, with the death of an important character or with deep disappointment. Urbanism as the ideal is absent in these stories, and even though urban phenomena are mentioned they are not crucial to the plot in any of the stories. Their grounding in actual life rather than in dreams must be considered the main reason for this marginal treatment of urban ideals.

Again, it must be noted that urbanism has nothing to do with modernity. Modernity must be evaluated in totally different parameters, which would make for another interesting study. While traditional themes are the focus in three of the written texts (loneliness in old age, infidelity, the whims of nature), in the fourth story the worry about the future of Balochistan and the Balochi language is intertwined with the theme of loneliness, and in the fifth story human egocentrism is depicted in a somewhat modern context.

The answer to whether there is an urban mind in Balochi literature must, however, be affirmative, at least for the oral narratives. The urban lifestyle and occupations are depicted as the ideal ones, those that one can only dream about. Even though these oral narratives may have drawn upon a cultural heritage that was not only limited to the Baloch, it would have been impossible to tell stories

about concepts that were totally unknown to the audience or for that matter the storyteller. Thus, there must have been a certain presence of urban concepts, as well as knowledge of an urban lifestyle, in the very rural area of Balochistan during the time when these stories came into being. The very old dichotomy between the “Baloch” and the “townspeople” (see above) is further evidence that the people of rural Balochistan had an awareness of urbanism even in past centuries.

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20. 'James His Towne' and Village Nations: Cognitive Urbanism in Early Colonial America

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ABSTRACT

The end of the medieval European urban trajectory arguably lies with the mercantile expansion of the Elizabethan and Jacobean periods. In this context, the chapter examines the early colonial ventures on the eastern seaboard of North America, and what would become the first permanent English settlement in the New World. When ships from London arrived in Virginia they encountered sophisticated tribal federations like the Powhatan, living in large, defended settlements embedded within extensive trade networks. While archaeologists are accustomed to studying these sites through models of village life, it is argued here that they can also be fruitfully approached through the urban sensibilities of the colonists. Significantly, from the very beginning the English labelled their tiny fort *Jamestowne*, and showed no hesitation in applying the same linguistic elevation to the surrounding indigenous centres. They also believed that this urban perception was shared by the Native Americans. A case study of Nouvelle France, the extended settlement along the St. Lawrence River based around Québec, reveals in some ways the opposite picture in a colonial encounter that saw entire indigenous nations denigrated as 'villages'. Such dislocations between different groups of Europeans illuminate the widely varying cognition of urban and non-urban space in the North American colonies.

Introduction: Invisible cities

In 1972, Italo Calvino published a beautiful and hallucinatory novel, mapping the stories told by the explorer Marco Polo to the conqueror Kublai Khan.¹ Feeding his patron's imagination, and using words alone, the traveller conjures visions of more than a hundred different cities that he claims to have visited, each more fantastic than the last. Corresponding to psychological and historical states, to possibilities and transformations, each town of his narrative draws a new, critical

¹ Calvino 1972.

link between the urban fabric and its intangible echoes, conveying the experiential essence of each place.

Thus we read of cities and desire, cities and memory, cities and signs; of 'thin cities', 'hidden cities' and 'continuous cities'; of cities and names, cities and the sky, cities and the dead. At the same time these are the dreams of a man whose far-ranging journeys ironically bring him a world that is slowly contracting, exchanged with those of someone whose appetite for conquest is expressed in ever-expanding horizons – another layer of perception. Ultimately, all the tales are revealed as aspects of the same place, Marco's own city of Venice, "that decaying heap of incomparable splendour [...] evidence of man's ability to create something perfect out of chaos [...] a place where rats thrive; where the dead can seem to outnumber the living".

Le città invisibili (Invisible Cities'), the title of Calvino's book, surely stands as one of the best definitions of the urban mind: mutable and varied, elusive and utterly dependent on context, yet simultaneously a mental landscape that could not exist without what it underpins, the gritty reality of life in a town. Beyond the immense range of possible forms contained within the concept itself, cognitive urbanism also encapsulates the idea of the city as palimpsest, not only of individual experience but also as a collective repository of separate histories, remembrances and aspirations unfolding over the long life of a settlement.² But how does this urban mind mesh with the more conventional archaeology of towns, in particular within the Northern context that this chapter addresses?

The historical trajectory of urban studies has unsurprisingly tended to focus on the great cities of the past, especially those on every shore of the Classical Mediterranean, their late Antique descendants, and the later proliferation of medieval towns. In an explicitly archaeological context, their ancestors in prehistory have also attracted attention – the Bronze Age city-states of the Aegean, the Mesopotamian and Indus polities, and before them the early conglomerates of the Neolithic. In Africa and Southeast Asia the urban centres of the first millennium AD have also come under scrutiny. Some of the same emphasis is appropriately present in the present volume, with time-depth case studies of conurbations such as Byzantium-Constantinople-Istanbul. Key to all of these is a certain element of recognition. Even the earliest examples, such as Catalhöyük, 'look like' towns – densely settled structures that seem to us bustling with life in their narrow alleyways, concentrated population centres that appear 'different' from the equally instinctive concept of the village.

Much of this volume deals with the renegotiation of urban form, and the way in which the town is shaped according to requirement and circumstances. The question of definition – what is a town? – is discussed elsewhere in the book and will not be revisited at any length here. However, a crucial characteristic of the urban mind is that it resists the easy check-listing of allegedly diagnostic attributes that have for so long dogged the study of towns. A multiscalar analysis is cru-

2 This has also been profitably explored by other authors, notably in Lively's *City of the Mind* (1991), in which an architect in the midst of a personal crisis renovates a London property, and sees his own existence mesh imperceptibly with the lives of those who once inhabited the centuries-old streets he walks every day. Other important London examples include Sinclair 1975, Ackroyd 1985 and Moorcock 1988; we also see the urban mind clearly in Moorcock's monumental 'Between the Wars' quartet (1981, 1984, 1992, 2006), in which the entire history of the twentieth century is interpreted through the lens of Classical cities and their perceived socio-cultural heritage.

cial to a broad appreciation of cognitive urbanism, not least in understanding the imbalances of town metabolism in different areas and cultures. At the most basic level, what constitutes the urban is not merely a matter of socio-economic choice in any given context but also affects the actual shape of the 'towns' themselves, which may appear in utterly variant form dependent on circumstance. Thus in the following pages we shall encounter a walled 'town' that could be traversed on foot in less than a minute, and explore entire nations characterised by foreign contemporaries as 'villages'.

These questions are particularly suited to students of material culture. Archaeologists are used to working with innumerable ancient environments and perceptions that are characterised not only by variety and change over time, but also by internal differences of perspective. According to the constituents of their identities (themselves subject to contextual variation) the same ancient people may have lived side by side, but still have inhabited cognitively different worlds. In this light the notion of the urban mind also embraces issues of idealism as contrasted with an eventual experience that may have fallen far short of expectation. Just as disadvantaged individuals today may dream of escaping rural poverty for life in the 'big city' – a place that exists as much, if not more, in the mind as in reality – so we may find evidence for similarly bruised aspirations in the past.

In all this work, the role of communication and choice must be stressed, conscious or otherwise, and the questions this raises are endless. What did past peoples tell each other about their experience of urban life? Did they think of it in something approximating those terms, or did they not feel that a distinction existed? What did those who had never seen a 'town' think such an entity looked like? Did a town confer reputation, and if so, to whom and in what way? To what degree did the urban preclude or presuppose the rural, perhaps fused in the notion of hinterland, or was there indeed a border at all? Were city-dwellers aware of an external dependence, if it existed? Are there circumstances in which urban living can be perceived as a kind of mental discourse, an ideal image of circumstance externalised and given a physical reality? And if so, when and why does this happen, and what form could it take?

Strangely perhaps, motivation can be seen as one of the most crucial factors of all – something that can be explored particularly fruitfully in early colonial America as we shall see below. Participation, and how it is structured, granted or denied, also plays a part in the urban mind. Both of these things can, and usually are, dramatically reified in the physical environment of towns, though in radically different forms dependent on socio-geographic context.

Larger issues include the nature of governance, and whether certain forms of it help or hinder an urban trajectory. Such fundamentals as language also play a part, because towns are nothing if not labels. These extend both to the inhabitants and to those who dwell elsewhere, in the local equivalents of 'townies' and 'yokels' – most interestingly when these epithets have shifting applications as people move between different locational spheres. Urbanism may also be perceived as having a spiritual dimension, on occasion above all other aspects of its experience. Towns may be understood in different ways depending on the age and life histories of their inhabitants – and indeed according to the convolutions of their own cultural biographies. There are truly such things as 'young' and 'old' towns. Even urban sound- and scentscapes may differ from others, and all of these may be filtered through contemporary perceptions of art and its opposites, again expressible in material culture.

Archaeological enquiry is inherently political, never neutral or objective. Careful constructions (and usually distortions) of the past have often been used as fuel for social crises, justifying wars and genocides in the name of rectifying perceived historical injustice. When environmental impact is added to the mix, one of the objectives of this project is the attainment of a new language for urban understanding. At its apex, this terminology focuses on the interaction of social and ecological conditions, expressible perhaps as alternative and constraint, as humans and environment combine in ways both productive and destructive.

Urbanism is clearly highly dependent on the interlocking potentials of local, and site-specific, ecosystems. For settlements that rarely if ever produce their own food supplies, there must be adequate provision of such resources, coupled with access to fuel and water. It must be possible to control or at least regulate natural forces that might negatively impact on the town, such as flooding, as well as hygiene hazards that could arise from untreated sewage and garbage. These factors will almost certainly have both local and regional dimensions.

The above contentions in themselves embrace a pluralistic and varied reading of urbanism as a phenomenon that is already at odds with the rigid definitions critiqued above. However, the most important factor in the urban mind, indeed its very basis, is the argument that any and all of these are also subject to socio-cultural influence and conditioning, at times in dramatic opposition to apparently rational behaviour. At its extremes, the strictures of an urban mind-set can be life-threatening for its adherents as well as those affected by its projections.

Case studies at the old world frontier

The urban mind has, of course, many facets, but the focus of this contribution shines on a very specific data-set, namely that of the Old World periphery. In its broadest expanse, which includes much of Northern Europe, we find cultures and environments very different to those which generated the Classical city. Among them were civilisations that, technologically and socially, could easily have developed towns, but chose not to do so. In some instances we meet ancient societies completely surrounded by urban-dwelling cultures, with whom they enjoyed close trading links and to which they regularly travelled, but still without pursuing a similar agenda in their home environment. Equally we discover cultures that enthusiastically embraced the urban concept, but expressed in forms markedly different from the conventional template of a town. Still others adopted and discarded urban trappings according to circumstance.

To briefly take an ancient example by way of introduction, a broad-range case study can be found in the urban spectrum of the Viking world.³ Not least, here we see clearly the multivariate reality that lay behind previously simplified paradigms of medieval urbanism, usually based on supposed descent from or rejection of Roman models.⁴ In the eighth to eleventh centuries AD, Scandinavians travelled to cities such as Byzantium, and partially founded substantial towns like Novgorod and Kiev,⁵ and yet in their homelands made do with single-street

3 Brink and Price 2008.

4 A distinction enshrined in the title of what was until the mid-1990s the main sourcebook on the subject, *The Comparative History of Urban Origins in Non-Roman Europe* (Clarke and Simms 1985), excellent for its time but now superseded by later work.

5 N. Price 1998; 2000a.

beach markets for centuries.⁶ In their North Atlantic colonies such as Iceland and Greenland, pressing environmental constraints meant that towns never developed, and urbanism is largely a modern phenomenon there.⁷ In terms of Scandinavian cultural contacts, the societies of Anglo-Saxon England and Carolingian Frankia were firmly urban,⁸ as were the Arab Caliphates in the Middle East and Iberia.⁹ By contrast the Picts and Scots definitively rejected town life, despite trading in the urban centres of other cultures.¹⁰ In Ireland the situation was different again, in that the native elites (whose power was based on control of people rather than territory, together with influence over uninhabited but numinous sites of prehistoric significance) did not build towns themselves but enthusiastically allowed the Vikings to do so around the coasts.¹¹ The resulting symbiotic relationship of urban Norse and rural Hibernians was not without its conflicts, but was generally of mutual benefit and resulted in a number of hybrid identities across the social scale.

In all these disparate cases, it should be remembered that the Scandinavians involved were often the same individuals, moving with apparent ease through the immense cultural range of their military and commercial activities. The cognitive space of the Vikings is not easy to chart with accuracy,¹² but clearly their urban perceptions were shifting, usefully inconsistent and above all adaptable in context.¹³

Interestingly, it is clear that the Viking Age Scandinavians did not possess, or coin, a specific term for what we would call towns. This applies not only to such places in their homelands, where an urban definition is in any case arguable, but even to massive conurbations such as Byzantium. *Garðr*, later *gård*, is the term from which the modern English 'yard' derives, and literally denotes an enclosed space, most often with connotations of habitation. In more tangible, cognitive terms, it appears to have generally meant something close to 'settlement'. As well denoting individual farms – the most common usage of the term – *garðr* was also employed at a variety of levels from the cosmic to the undeniably urban. The different worlds inhabited by humans and supernatural beings are generally named in this way, including *Ásgarðr* ('Place of the Æsir [gods]') and *Miðgarðr* (the 'Middle Place', where mortals live¹⁴). Larger settlements of different kinds were also so named, thus Byzantium was *Mikligarðr*, the 'Great Place', Novgorod was *Holmgarðr*, the 'Settlement on the Island', and so on. In most instances there is nonetheless a sense of boundedness and enclosure, ranging from a domestic fence to a defensive palisade or a city wall, which is not found in places given other kinds of names.

There are intriguing parallels for this ambiguity among some of the Vikings' cultural contacts, for example in the complex melting pot of Ireland. Here again, terminology is problematic, with a broad semantic range in evidence. The sort of language that would refer to urban centres in Latin (*civitas*, *urbes*) was co-opted in

6 The type-site here is Kaupang in Norway; for the latest overview see Skre 2007.

7 Fitzhugh and Ward 2000; Barrett 2003.

8 N. Price 2000b.

9 N. Price 2008.

10 Foster 2004.

11 Valante 2008.

12 Price 1994, 1995.

13 Hillerdal 2009, 41–83, 205–288.

14 This is the origin of J.R.R. Tolkien's Middle Earth.

Ireland for ecclesiastical centres, and this extended to Irish words such as *cathair*, which could describe a city, a monastic settlement or even a high-status dwelling. *Baile* was used to denote an urban site in the Middle Ages, and still today, but this also embraces 'townlands' as an administrative unit. When the Viking ports are explicitly mentioned in the sources, words emphasising defence (*dún*) are often employed, rather than anything with economic overtones. Crucially, there is no shift in terminology when the Viking coastal 'towns' take on serious urban status in the High Middle Ages, though the word *longphort* is exclusively used to refer to the defended camps of the early incursions. Not until the Anglo-Norman influences of the 1170s and later do we see the importation of English urban terminology, and this clearly comes from outside. In short, there is no specific word for 'town' in the early medieval Irish sources either.¹⁵

The question of an urban language, or at least terminology, is important here when considering how Viking Age Scandinavians (and those they encountered) understood the nature of these settlements. Regardless of their unwillingness to give it linguistic tangibility, at the same time there is no doubt whatever that in the commercial centres all across the Viking diaspora, the urban mind engendered a highly successful and long-lasting reality.

Examples of this kind expose fault lines or breaks in the ideological basis of urban life. By adopting a single chronological and geographical focus, explored in depth, we can now attempt to illuminate the mental processes that stimulated, promoted or inhibited the urban mind at one of these 'imbalances'. The example chosen in one sense lies at the extreme periphery of the Viking world mentioned above, in that the Norse were the first Europeans to settle (albeit briefly) across the Atlantic.¹⁶ Six centuries later, the eastern seaboard of early colonial America forms a useful microcosm of the urban mind in action, under conditions that tested its application in often fatal ways. In adopting a high-resolution approach, from a new perspective, we can examine what happened when these internalised landscapes were externalised in confrontation with those of the New World. In cultural terms, our study contrasts the English settlements in the territory of the Powhatan confederation of Virginia, and the French incursions along the St. Lawrence River in Québec.

English America in the 1500s

In the century following Columbus' landfall in the Caribbean, permanent European settlement in the New World had been largely confined to the Spanish and Portuguese. A particular emphasis had emerged, for obvious reasons of economic exploitation, on the gold-rich indigenous empires of Central and South America that offered the colonists not only material wealth but also an endless source of slaves.¹⁷

In the North and especially in what is now Canada, French adventurers and merchants had been making limited incursions throughout the 1500s. Prior to

15 This question has been very little debated, or published, in Irish archaeo-history and this paragraph is entirely reliant on discussion with Dr Clare Downham of Aberdeen University's Department of History, to whom I express my grateful thanks.

16 Lewis-Simpson 2004.

17 The history of the Spanish conquest of the Aztecs, Inca and Maya is well known, but for a useful Native American perspective see the essays in Josephy 2005, Ch. 2–3.

the late sixteenth century, the only major English contacts with North America had been through fishing expeditions with a very minimal component of exploration.¹⁸ In the late 1570s their attention shifted to what is now North Carolina but was then called 'Virginia' by the Elizabethans, in honour of their queen. The first European presence in the region had been a failed Spanish attempt to establish a mission in the early 1570s, using their settlements in Florida as a base.¹⁹ Upon the abandonment of this Jesuit colony, in 1578 and 1580 Sir Humphrey Gilbert and Walter Raleigh employed Portuguese pilots to help them locate a suitable site for settlement in the Outer Banks, operating under royal patent to establish a commercial venture that it was hoped would bring similar rewards to those found in the colonies of New Spain far to the south.

On the basis of these early English expeditions, in 1584 a more substantial exploratory mission was launched to Roanoke Island, staying around a month and scouting the territory,²⁰ with a settlement founded by new ships from England the following year. This quickly foundered and was abandoned after conflict with the local tribes, but in 1587 a second colony was again established nearby. After the governor, John White, returned almost immediately to England for resupply, no ships were sent back to Roanoke until 1590, when they found the site abandoned. The story of the 'Lost Colony' has entered early American folklore and the fate of those left behind will never be securely known, but on the available evidence it seems almost certain that they had first been attacked and then assimilated with the local tribes. White's relief ships were forced by bad weather to go back to Europe without mounting a proper search for the missing colonists, and no further voyages were made to Virginia for at least a decade, though some contact may have been established around 1605.²¹

By the early 1600s the English had thus seen three failed settlements in North America, all of them in the Carolinas. Nevertheless, and again prompted by the riches pouring into Iberian coffers from the South American colonies, it was decided to make another English attempt at settling in the New World. The objectives were primarily the exploitation of gold deposits believed to be present in Virginia, the opening up of a rapid passage to the Orient, and also the conversion of the local Indian tribes to Christianity. Ironically, the colony that resulted – Jamestown – would achieve none of these aims. Unknown to the settlers, two of them were impossibilities from the start, there being no gold in Virginia and no route to India, but even the religious dimension of the voyage would fail and be superseded by the ministrations of the later *Mayflower* dissenters in their 'Plymouth' settlement.²² Though not in the ways they had anticipated, the foundation of Jamestown would nonetheless succeed, barely, in establishing the grip on the Continent that the English wanted, serving as the first lasting foundation of what

18 Quinn 1974a.

19 Gradie 1988; for information on the Spanish *entrada* into what is now the southern United States, see Clayton *et al.* 1993.

20 Quinn 1985.

21 The early English settlement attempts have been ably summarised by Quinn 1974a, 1985, still the best surveys; see also Gleach 1997: Ch. 2–3, and for the end of the Roanoke colonies, Fausz 1985 and P. Jones 2001. The latest archaeological review can be found in the theme edition of *Avalon Chronicles* (vol. 8, 2003) dedicated to 'The English in America, 1497–1696'.

22 See Philbrick 2006 for the latest history of the Pilgrim settlement and its disastrous consequences for the Native Americans of New England.

would much later become the United States. It is this settlement that forms the focus of our primary case study in the urban mind.

Into the James River

In December 1606, a little more than 100 colonists set sail from Blackwall in the *Susan Constant*, the *Godspeed* and the *Discovery*, bound for the Chesapeake.²³ They had been indentured for the task by the Virginia Company of London, a merchant venture for New World colonies under royal charter, which would later reconstitute itself as a joint stock holding. Unlike the previous attempts, some of which had amounted to little more than piracy under dubious state sanction, this was to be a solidly commercial project from the start, underpinned by what we would today call a business plan. A number of different leaders were chosen to combine expertise on land and sea, with sealed instructions as to how command was to be distributed after the colony was established.

After an eventful voyage via the Canary Islands and the West Indies, with considerable internal conflict among the would-be settlers, Virginia was sighted in April 1607. By May, having scouted a number of possible sites along the watercourses and inlets, a place was chosen to build a settlement on a marshy island-peninsula near the bank of a broad river. From the beginning, the plot of land was named 'Jamestowne' (some versions have 'James his towne', but in any event the contracted name was soon universally adopted). This name, which was also extended to the 'James River' and 'James Island', marked the settlement as a whole – an aspiration and a statement. The initial foundation was called James Fort, but for a long period this formed the only settlement at the location and was de facto also 'Jamestown'.

On most of the colonial ventures, whether privately initiated or company sponsored, some measure of preliminary planning was made for the eventual form of settlements. Crude site plans or written instructions were drawn up, advising on suitable locations and layouts, on the appropriate types and relative status of buildings, and so on. On the Jamestown voyage, each of the three ships carried duplicate mission documents, in case not all of them survived the hazards of the crossing. Interestingly, one detail of the mission was not prescribed in advance – the name of an eventual foundation. We do not know if the Jamestown label had been coined unofficially beforehand, but as far as is possible to tell it seems to have been invented on the spot. Many other colonial settlements of modest size have 'town' as part of their name, but the early European sites of the eastern American seaboard are different in the extreme isolation of their cultural surroundings, and here the Jamestown label has no parallels. The profit motive and the notion of an intentionally short occupation – "make money and leave" – similarly does not plausibly explain the choice of the Jamestown name. While some investors and settlers wanted quick returns followed by a resumption of life in England on considerably better terms than when they had left, others clearly aimed for a long and successful life in the colony itself, the classic hope for a New World of personal improvement.

23 Jamestown has attracted a vast literature; recent overviews, with extensive references can be found in D. Price 2003 and Horn 2005; Gleach 1997 is the standard work on Jamestown's relations with the indigenous peoples of Virginia. The most useful contemporary English perspectives are collected in Barbour 1986.



Plate 1. The only contemporary depiction of Jamestown: a minute sketch plan of the triangular fort, drawn on a spy map of Virginia prepared in 1608 for King Philip III of Spain by his ambassador to England, Don Pedro de Zúñiga. Archivo General de Simancas, Ministerio de Cultura de España, M.P. y D IV-66.

The ‘hinterland’ of Jamestown, consisting of absolutely everything outside its tiny beachhead, was a far from uninhabited landscape. The settlers had in fact sited their colony in the heart of the most powerful confederation of tribes on the eastern seaboard – more than thirty Native American peoples in political alliance under one paramount chief whose name stood then, and now, for the whole polity and its population: Powhatan, also known as Wahunsenacuh.²⁴ Europeans were not unknown to them, following painful experience of the Spanish mission in the 1570s.²⁵

Initial relations with the Powhatans were first tentative and then rapidly hostile. Less than two weeks after landfall on the James River, a pitched battle was fought at the Jamestown site which resulted in the deaths of at least 10 colonists and many more Native Americans. Until this the settlers had erected no serious defences, living in makeshift tents on the peninsula and leaving their weapons crated. Disputes had arisen among the English commanders about the necessity for caution and martial readiness, with the objections of the most experienced senior figure, Captain John Smith, being largely over-ruled. Following the Native American assault, which had been preceded by days of what were obviously scouting missions to gauge the English lack of defences, it was decided to hastily build a fortification. The resulting triangular structure was the first physical incarnation of Jamestown and the image with which it is now most associated (Plate 1).

Some 16 seasons of archaeological excavations have been carried out at Jamestown,²⁶ uncovering almost all of the original triangular fortification and

24 There are various alternative spellings, including Wahunsonacock.

25 Gleach 1997, 89–97.

26 The archaeology of Jamestown has been summarised in the seven volumes of *Jamestown Rediscovery* (Kelso 1995–2003), with a concluding review in Kelso and Straube 2004. Kelso 2006 gives the latest overview, with additional academic perspectives on the archaeology of the site presented in the theme issue 40 (1) 2006 of *Post-Medieval Archaeology* and at the dedicated conference of the Society for Historical Archaeology

Plate 2. A reconstruction based on archaeological excavations of James Fort, Jamestown, Virginia, shortly after its construction in 1607, overlain on an aerial photograph of the site today. In the most recent season of excavations, since this reconstruction was made, five new structures have been identified inside the fort. Courtesy of William M. Kelso and Preservation Virginia.



Plate 3. Excavations at Jamestown, Virginia, for the Association for the Preservation of Virginia Antiquities. The oblique line of post-holes across the lower part of the image marks the palisade wall of the 1607 James Fort; the distance between this and the church in the background represents the entire breadth of the settlement, with human figures for scale. Courtesy of William M. Kelso and Preservation Virginia.

also the extensions built on successively through the seventeenth century (Plates 2 and 3). Deep palisade trenches and ditches mark the line of the first walls and their replacements, with bulwarks for cannon at the apexes of the triangle. The temporary nature of the initial foundation is clear, as is the clear contrast with the substantial buildings erected later in timber, clay and brick on cobblestone foundations as the colony slowly became more secure. More than half a million artefacts have been catalogued from the site. In particular, a wealth of domestic rubbish has been recovered from garbage pits and the infill of wells, revealing a material culture of considerable status. In its consolidated form, after the trials of the first years were over, the James Fort enclosure is believed to have contained about ten permanent buildings. In the beginning, its interior was occupied by lean-to shacks, crude cabins and tents.²⁷

As the documentary record has long suggested and the archaeological excavations have now demonstrated beyond doubt, at Jamestown we thus encounter a nominally urban settlement that can be traversed on foot in less than a minute. What does this mean? To attempt an answer we must begin with a brief historical review, set in a broader colonial and indigenous context, and then proceed to a discussion of the cognitive dissonance within and through which Jamestown emerged.

Life and death at Jamestown

The conflicts that necessitated the building of James Fort continued into the summer of 1607, and it gradually became clear that the English had established themselves in the middle of an ongoing but relatively low-level Indian war, characterised by duplicity and the changing of sides, in which each tribal polity tried to involve the settlers to their own advantage. From the very beginning, the Jamestown colonists were unknowingly manipulated and coerced by indigenous leaders who had their own agendas, and who bore the scars of earlier encounters. On both sides misunderstandings and violence were interwoven, resulting in short-term disaster for the Europeans and long-term annihilation for the Native Americans.

The Jamestown settlers were also utterly disconnected from their environment, and unlike the Native Americans possessed no socio-ecological memory of how to survive there.²⁸ (It should also be remembered that the site chosen for the settlement, the marshy offshore island, was unoccupied when the English arrived precisely because the Powhatans had long recognised it as an unproductive place to live.)

Against this background, more than half the colonists died soon after constructing the fort, mainly due to harsh weather and food shortages but exacerbated by soured relations with the Powhatans. More than 70 burials have been

held at Williamsburg in 2007 (the Jamestown 400th anniversary). No final report has yet been published as excavations are continuing, but the interim field reports for 1994–2006 can all be downloaded from http://www.preservationvirginia.org/rediscovery/page.php?page_id=1 [retrieved in December 2009].

27 The most accurate 3D visual reconstruction of Jamestown, firmly based on the archaeological evidence with some minor points of deviance, can be seen in Terrence Malick's 2005 film *The New World*.

28 Reeds 2009.

excavated from the first quarter-century of Jamestown's life, including the bodies of several female colonists, a probable Captain who has been identified as Bartholomew Gosnold, and many others, including four men with gunshot wounds. Life expectancy seems to have been as short as the written record suggests: about 25 years for men, slightly longer for women.

As the spring of 1608 approached, contacts with the local tribes improved and the settlers were able to obtain greater supplies of food resources with a degree of local assistance. John Smith assumed leadership of the colony, established satellite settlements around the region and also liaised extensively with the Native Americans. His efforts, which will not be discussed at length here, form the core of the enduring legacy of the Jamestown story in popular history. However, as the English intentions for a permanent colony became clear, and as Powhatan consolidated his own modest empire, it became clear to the tribes that they simply had nothing to gain and much to lose if Jamestown survived. By late 1609, the English and the Powhatans had been able to gauge each other's readiness in depth. Efforts at peace-making – including the famous episode in Colonist lore involving Powhatan's daughter Matoaka (Pocahontas) – had largely failed, and the winter of that year marked a dramatic shift in the fortunes of the colony. Smith himself had returned to England in October, debilitated by accidental powder burns, travelling back with a flotilla of new ships that had now arrived with a further 185 to 270 colonists. His departure not only deprived Jamestown of its strongest leader, but also the colony's main liaison with Powhatan. The latter was also declining in years and beginning to lose his firm hold on the powerful but fragile tribal consolidation that surrounded the English.

Much has been made of this phase of the settlement's history, mostly based on Smith's diaries in which he extrapolates from consistent problems that he experienced earlier in getting the higher-status colonists to work. An imbalanced proportion of the settlers were 'gentleman investors' who preferred to physically accompany their money to see to its proper profitable use in the founding of the colony. In England these men were utterly unaccustomed to manual labour, and transferred this attitude to the New World. Smith often laments the lack of basic skilled manpower and Jamestown was sorely deficient in carpenters, farmers, journeymen and generally anyone who actually knew how to make a living from the land or to physically construct a suitable place to dwell.

The collision of ingrained social conditioning and economic imperative was almost fatal. In the winter of 1609–1610 the situation dramatically worsened for the colonists, a period they termed the Starving Time. Relations with the Powhatans had deteriorated to almost total hostility, with a withdrawal of all indigenous subsistence relief and also the transformation of the territory beyond the stockade into a no-go area for the English. They could not safely forage for food or kindling, nor access any form of winter storage outside the wall. What little they had saved was taken or destroyed by the Powhatans in an apparently deliberate attempt to push the colony to extinction. Inside Jamestown the starving inhabitants ate every living thing they could find, consumed the grass and even started chewing the timber in a vain attempt to find sustenance. Several murders were recorded and there were instances of both infanticide and cannibalism. An unknown number of colonists consumed their dead comrades, and when a Native American was killed in a skirmish his buried body was exhumed and eaten. Such behaviour was punished when possible and the colony's ineffectual leaders desperately tried to hold Jamestown together as a cohesive entity, but by the end

of the winter only 60 settlers survived. The archaeological excavations of the cemetery have revealed a number of hasty burials, probably resulting from this period.

In this socio-metabolic profile of the settlement, here again we find a link to the cognitive aspects of the 'town', through the failed transition of subsistence behaviour made by many of the socially misplaced settlers. Though Smith's well-known contempt for the 'better sort' has become part of the legend surrounding America's first permanent European colony, we have little direct reason to doubt his word. The distance between production and consumption, especially of food resources, is a fundamental component of many urban scenarios, but it should be remembered that this can be a social as well as literal divide. In several instances, it seems that the gentrified settlers at Jamestown had reached a mental state where they would literally starve rather than work (though the archaeological data indicate that at least some of the settlement's logistics were functioning and that not all the colonists had given up their efforts at civic duty). In addition to the obvious toll on the settlers themselves, the Starving Time also affected the built environment, in that the fort was allowed to fall into substantial disrepair. The timber structures had been dismantled for firewood, and even the main gates were off their hinges.²⁹ The Powhatans' contempt for Jamestown, bound up with intricate concepts of what constituted an honourable opponent in war, was by this stage such that they did not even bother to attack it.

After the terrible winter of the Starving Time had reduced the Jamestown population to a fraction of its original numbers, the survivors were temporarily reprieved by the arrival of a much-delayed vessel from England that had itself experienced prolonged shipwreck in Bermuda.³⁰ By the time they made landfall its crew were in almost as much need as the inhabitants of Jamestown, but together they managed to patch up their meagre provisions and reassess the situation. With only two weeks' food left, it was enthusiastically decided to leave the colony and return to England. As the fabric of the settlement was taken apart, everything that could be salvaged or moved was packed for transport and loaded on the four ships that remained, while the rest was destroyed or buried. On 7th June 1610, Jamestown was abandoned.

Only one day out from the settlement, however, the ships carrying the emaciated colonists were astonished to encounter the advance party of an entirely unexpected resupply mission that had been sent from London months earlier, bringing 150 new settlers, a great store of provisions and not least a new governor. Returning to Jamestown, the site was reoccupied and restocked, and radically reorganised with a new governmental system that made it unlikely for something as devastating as the winter just past to be experienced again. The buildings were restored and strengthened, and new, more lavish residences were constructed for the governor and his staff. As the Virginia Company made the decision to raise its level of investment, a steady stream of new ships and settlers continued to arrive. By 1611 there was no longer any doubt that Jamestown was a permanent fixture, beyond the capacity of the native peoples to dislodge.

With a new order in place, the settlement prospered and soon expanded dramatically beyond the original walls of the fort. It was not abandoned again until

29 The deterioration was so extensive that Sir Thomas Gates' relief expedition, arriving in May 1610, initially believed that the settlement had been abandoned; D. Price 2003, 137.

30 An episode that itself entered English folklore and inspired Shakespeare's *The Tempest*.

centuries later when it formed but one tiny centre, no longer needed, in the great colonial province of New England. Back in 1610, if the survivors of the Starving Time had left Jamestown even a day or two earlier, they would most likely have missed the incoming rescue mission and sailed back to Europe oblivious, with unknown consequences for later history.³¹

Native American *townes* in the Carolinas

We have seen the unusual choice of an urban designate for the Jamestown settlement, and how it contrasted with the relatively miniscule nature of the actual foundation. It is interesting to note that this town-based perception of settlement was also applied by the English settlers to the habitations of the surrounding Native American tribes. Again and again we read in the colonists' letters how they visit the 'townes' of the Powhatans, the term used for the longhouse settlements of the important sachems around them. King James' town (and island, and river...) was set by them in a nominally urbanised Indian landscape, thus deepening the familiarity of the social context that the English imported. As a comparison for the colonial settlements, we can now consider how the indigenous peoples' built environment was characterised by the Europeans.

The urbanised English perception of Native American settlements in fact had a much longer history than the Jamestown venture, dating at least to John White's reconnaissance voyages on behalf of Raleigh. One of the most important products of his 1585 journey, at least from a present-day perspective, was the collection of watercolours that White made in the New World, depicting the flora, fauna and particularly the indigenous societies of 'Virginia'.³² Used to illustrate almost every account of the early colonial period in North America, among his paintings are a number of individual portraits and also pictures of settlements among the North Carolina Algonquians. The images are labelled in White's hand and their content is also supported by the text of Thomas Harriot's *Briefe and True Report of the New Found Land of Virginia* from 1590.³³

Of interest to us here are paintings of Secoton and Pomeiock (in White's idiosyncratic spellings,³⁴ Plates 4 and 5), respectively open and palisaded settlements that are both clearly labelled as *townes* in the accompanying text. From notes made by the English it is clear that they understood both types of place to be only seasonally lived in, and even that a year or more could pass between reoccupations. It is unclear from the drawing how large Secoton actually is as it obviously extends beyond the area that White drew, but Pomeiock is depicted in its entirety and has 18 longhouse structures of various kinds, arranged in a loose circle around a large hearth, the whole settlement enclosed by a defensive wall of stakes.³⁵ Beginning soon after his return, White's drawings were used by other

31 This episode is recounted in detail in D. Price 2003, Ch. 9 and 10.

32 See Sloan 2007 and 2009 for detailed reviews of White's paintings and their importance.

33 Clucas 2009.

34 Later called Secotan and Pomeiooc, though the unorthodoxy of Elizabethan spelling makes the distinction largely meaningless

35 Sloan 2007, 110–113; see Pratt 2009 for a discussion of White's 'accuracy' in painting what he actually saw, with the conclusion that although he may have been culturally influenced as to the body postures and attitudes of his subjects he nevertheless reproduced





Plate 6. The urban template for Virginia's settlers: a panorama of London in 1616, by Claes van Visscher. Courtesy of Wikimedia Commons.

engravers as the basis for an illustrative tradition of depicting Native Americans that was to last centuries. Only five years after they were made, versions of the settlement paintings were being labelled as 'villages' by engravers such as Theodor de Bry,³⁶ and this terminology tends to be maintained today. It is symptomatic of the confusion around these labels that even in the modern academic literature we find statements such as "the village of Secotan was the chief town of the people of that name"³⁷ apparently without reflection on the inherent contradictions.

What is important is that in the primary record, made by White in 1585 while he was actually present in these places, they are named throughout using a *solely* urban nomenclature. It is important to note that White and Harriot were together presenting in effect an ethnography of Virginia, not a colonial encounter,³⁸ and this affects the form of their depiction. However, the same is *not* the case for Jamestown, and yet the urban labels are constant to both. Though separated by two decades, for both White and the Jamestown settlers their point of reference for such terminology was inevitably the Elizabethan capital (Plate 6). Described as a "Gentleman of London", White would have been intimately familiar with this archetypal town of an estimated 225000 people (in 1605). How can we equate the 18 buildings of Pomeiock 'towne' with the quarter of a million urbanites in contemporary London? Again, the answer lies in the cognitive structures surrounding what it meant – at every level – to live in a town rather than some other kind of settlement.

The view from nouvelle France

Interestingly, the culture-specific dimensions of this phenomenon – contrasting attitudes from different European countries – can be observed in French accounts of the tribes of the Eastern Woodlands. Here, at a broadly contemporary date and not that far away from Jamestown we find quite another projection of social space, manifested in a denial of the Native Americans' 'urban' equality

substantially what was there. This is an important point as it implies that Pomeiock was genuinely this small. Archaeological data certainly support this scale of settlement in the Eastern Woodlands at this time.

36 E.g. de Bry's map of 1590, labelling the settlements of Pomeiooc, Aquascogoc and Secotan in this way; he also uses urban nomenclature for individual studies; Sloan 2007, 106.

37 Sloan 2007, 107.

38 Van den Boogaart 2009, 113, though his deconstruction of the semiotics of the accounts again uses 'town' and 'village' interchangeably and without reflection.

with the settlers. The sources do not employ the term *villes* for the indigenous settlements, but instead almost universally *villages*, even when the places described are almost on the scale of small nations. In other words, far from 'elevating' minor stockade enclosures to urban status as the English did, the French were down-sizing undoubtedly major political and administrative centres to mere villages.

The most eloquent example can be found in the unique document probably written by René Cuillerier and known as *Nation Iroquoise*,³⁹ an account of life as a captive among the Oneida Iroquois in the seventeenth century. Forming what is effectively an early modern ethnography, the manuscript includes a number of detailed descriptions of settlements, with specific terminology in a precise political context. In this light it is worth reproducing the opening passage verbatim, including the author's equivalent of a title from which the modern name of the document derives:

Abregé des vies et moeurs et autres Particularitez de La Nation Iroquoise laquelle est divisée en Cinq villages. Sçavoir Agnez, Onney8t, Nontagué, Goyog8an et Sonnont8an. Le Premier village qui est aniers est voisin d'orange, le 2eme qui est onneyoute est a 25 lieües de distance en montant au Sud-oüest, le 3eme qui est nontagué est a 18 lieües d'oneyoutte le 4eme qui est goyogoüan est a 20 lieuës de nontagué et les Sonnontoüans qui sont les derniers villages sont éloignés de goyogoüan de 12 lieuës de sorte quils occupant en longer plus de 75 lieuës de país je veux dire depuis le premier vilage jusqu'au dernier.

Abridgement of the lives and customs and other Particulars of The Iroquois Nation which is divided into Five villages. Namely Agnez, Onney8t, Nontagué, Goyog8an and Sonnont8an. The First village, which is Aniers, neighbours on Orange [Fort Orange, renamed Albany by the English]. The second, which is Oneyoutte, is 25 leagues away moving uphill to the Southwest. The third, which is Nontagué, is 18 leagues from Onneyoutte. The fourth, which is Goyogoüan, is 20 leagues from Nontagué, and the Sonnontoüans, who constitute the last villages, are removed from Goyogoüan by 12 leagues, in such a way that they occupy over 75 leagues of the country's latitude; I mean from the first to the last village.⁴⁰

In the seventeenth century the French coined the name *Iroquoisie* (English Iroquoia), for the whole region inhabited by these people. The 'five villages' referred to here are known today as the Five Nations of the Iroquois Confederacy, which in the 1660s consisted of the Mohawks, Oneidas, Onondagas, Cayugas and the Seneca.⁴¹ Each of these not only represented a substantial population grouping but also a clear ethnic entity and, not least, a great deal more than five settlement units. Scholars have long debated the distances quoted in the document in comparison with those given in different annual reports of the Jesuit Relations,⁴² but

39 Brandão 2003.

40 *Nation Iroquoise*, f. I–IV, original orthography; Brandão 2003, 48–51.

41 The most comprehensive study of Iroquois-European relations can be found in Richter 1992.

42 Brandão 2003, 129–130.

the territory described cannot span less than 200 miles; the notion of only five 'villages' in this area is thus doubly absurd.

The author of *Nation Iroquoise* thus appears to be using *village* to refer to something much larger than we would readily associate with that term, akin to 'group', 'tribe' or indeed 'nation'.⁴³ This is reinforced by the way the author once uses a plural *villages* for the settlements of his fifth group, the Sonnonitoïans (i.e. the Seneca). At the time there were no universally accepted terms for individual settlements, and also frequent gaps in translation between the Iroquois languages and French, which may explain why a confusion arises in the manuscript that sometimes equates population names with the proper names of constituent settlements. However, whether in singular or plural it also makes the *villages* doubly reflective of how they were actually named in colloquial speech.

Scholars have tended to approach this in a different and somewhat contradictory way, such as the contention that late sixteenth- and early seventeenth-century Iroquoia was characterised by "village communities, which included three basic types: camps, hamlets, and towns".⁴⁴ The latter are said to be bustling places of up to 2000 inhabitants, the most densely-settled habitations – European or indigenous – in the whole of the American Northeast until the nineteenth century. Towns as defined in this way are usually inland sites occupying high ground, with appropriate defences, of substantially different character to the riverside settlements of the pre-contact period. The various tribes of the Iroquois possessed some ten of these urban centres, which together with the hamlets supported a total population of 20–30000.⁴⁵ While valuable and appropriate as historical analysis, this paradigm mirrors the definition-heavy, 'check-listed' development of medieval European urban studies and is utterly divorced from the contemporary terminology. Importantly, it ignores the imposed cognitive urbanism of the Europeans discussed here.

A colonial comparison: *l'habitation de champlain, Québec*

Just as the French perspective on the native settlements of the Eastern Woodlands differed markedly from that of the English colonists to the south, so we find a similar absence of urban pretensions in the nomenclature of their own foundations. An interesting case in point is the establishment of what would later become Québec City on the St. Lawrence River.

Founded in 1608, only a year after Jamestown, the settlement occupied what is now the northern side of the Place Royale. The project was the initiative of Samuel de Champlain, the pioneer of European exploration among the tribes of the St. Lawrence, who had spent years travelling with the Algonquin peoples of the region. Having scouted the possibilities for colonial settlement, in particular the commercial potential for a traffic that would ultimately lead back to the markets of the Continent, Champlain laid a far more thorough grounding for his planned permanent settlement than the English had in Virginia. With local trea-

43 Brandão 2003, 128–129.

44 Richter 1992, 17.

45 Richter 1992, 256–263 presents a comprehensive overview of the social geography of these Iroquois 'towns'.



Plate 7. An aerial reconstruction from archaeological excavations of Samuel de Champlain's *Habitation*, the origins of Québec City, showing the main enclosed residence with subsidiary dwellings beyond the walls. Illustration by Vianney Guindon, © Gouvernement de Québec.

ties and assurances of mutually beneficial trade in place, it was only then that he brought in labour and manpower (28 men at first) to construct his new home.

The site was extensively excavated in the late 1970s,⁴⁶ revealing a substantial two-storey mansion with two annexes and a turret, constructed of timber and stone at the apex of a broad promontory in the St. Lawrence River (*Plate 7*). It had well-built floors and interior rooms, with extensive cellars to hold the trade goods that were its *raison d'être*, remains of which were found in great numbers by the archaeologists. The house was surrounded by a high timber stockade of irregular plan, combining a succession of dogleg walls with the triangular defensive ditches common from contemporary European fortifications. At least two towers were included in the circuit of walls, and facing the water a ramp led up to a substantial emplacement for cannon. The moat was 4 m wide in places. Outside the stockade were a number of smaller dwellings, also built entirely in European style like the main residence. Small garden plots were laid out beside the extramural structures, but could be abandoned in case of conflict. At least one of the buildings also had its own, much smaller stockade. The promontory was also riven by ravines and natural bluffs, further adding to its defensive qualities.

Champlain himself called the enclosure his *Habitation*, 'dwelling'. In a sense the settlement was similar to Jamestown in that it formed a crucial component in the foundation of a larger European colony (in this case Nouvelle France⁴⁷), and also in that it consisted of a small defensive circuit with a few buildings inside. However, Champlain's settlement was also very different in that despite its deliberate mercantile footing it was essentially a glorified residence for one man and his followers. Mercantile activity was never intended to take place within the bounds of settlement, as this was felt to be a security risk, and instead markets were held outside the stockade, near the beach where the Native American canoes would arrive (*Plate 8*).

This element of planning is important in the present context. We know that Champlain meant his *Habitation* to develop as a trading centre for commerce up

46 The full report is Niellon & Mousette 1985; an overview of the site's material culture and urban development is presented by Lapointe, Chassé & de Carufel 1995.

47 Litalien & Vaugeois 2004.

Plate 8. Colonial space and urban function: a reconstruction of the crucially extramural riverbank market outside Champlain's *Habitation*, based on archaeological excavations in what would become Québec City. Illustration by Francis Back, © Canadian Museum of Civilisation.



the St. Lawrence and into the surrounding Native American territories, and the success of this mission is shown not only by the events of the succeeding decades but also by the fact that it became the historic core of what is now Québec City. Thus in complete contrast to its near contemporary at Jamestown, the impulse towards urban functions and a mercantile motor was present from the beginning in a settlement that did *not* in any sense style itself a 'town'. What lies behind these radically different trajectories for two settlements that initially appear so similar?

At one level, Champlain's individualism had parallels among some of the early English attempts at North American settlement other than Jamestown. The doomed base at Roanoke⁴⁸ or the Colony of Avalon established near modern Ferryland on Newfoundland,⁴⁹ had also been very much the initiatives of private adventurers, albeit backed by financial sponsors and sometimes the Crown. Roanoke was founded in 1585 as Sir Walter Raleigh's own property, while Avalon was set up in 1621 by George Calvert, later Lord Baltimore and Secretary of State to James I. In this they bear some similarity with Champlain's career, in the sense of an individual working for the commercial good of the state (he was supported by King Henri IV of France) through the coincident medium of his own enrichment. Significantly, none of these settlements was considered to be urban even in name, either by their aristocratic patrons or by their inhabitants, despite having the hardest of profit motives from the start.

The real difference between the private projects is that neither Raleigh nor Calvert had ever been to the New World before the establishment of their colonies; Raleigh in fact never went to North America, while Calvert first visited Avalon in 1627, six years after its foundation. Champlain by contrast was a tough operator who had spent years among the Woodland tribes, travelling alone into the Canadian interior further than almost anyone before him. The greater depth of Champlain's knowledge of his surroundings by comparison with that of the English settlers is undoubtedly central. Indigenous economic systems in the Eastern Woodlands have been studied in some depth in the larger St. Lawrence re-

48 Jones 2001.

49 The Ferryland excavations are reported in the 8 volumes of the dedicated journal series *Avalon Chronicles*, Tuck & Gaulton 1996–2003.

gion, especially for the Huron and their enemies the Iroquois,⁵⁰ and Champlain was able to use his experience to insert his settlement into the local ecological structures to maximum effect.

The nature of the respective ventures' sponsorship is also relevant. A key element linking Roanoke, Avalon and Champlain's *Habitation* was their individual motor, as distinct from a collective one conferred by a corporate commission. Is this the decisive factor in the 'cognitive urbanism' that gave Jamestown its name? As we have seen, the latter was established by the Virginia Company, a cartel of merchant and noble investors of whom a handful sailed with the colonists while most stayed in England. The settlers themselves were for the most part hired hands, eager to improve their circumstances and make a new start in a New World. The Jamestown flotilla and later settlement had different commanders for different aspects of the mission, again organised to a predetermined corporate agenda designed (badly, as it turned out) to maximise efficiency and profit. It must be acknowledged that whatever the source of funds, the people actually breaking new ground had deep personal investment in the venture's success – not least, their own survival depended upon it. However, the differences between the 'private colonies' and Jamestown are thrown into sharper light when one considers that the Virginia Company settlers were well aware of the stories surrounding the fate of Roanoke, and that in turn the Avalon colonists had Jamestown very much in mind when they founded their own settlement. All three colonies were established within a living-memory span of 36 years.

Cognitive dissonance in the eastern colonies

The cognitive dimension of the early English colonies in North America has hitherto been relatively little explored, but this situation is changing with a number of recent studies focussing on different aspects of intercultural dislocation. In particular, identity and memory have been underplayed as active agents in the continuous renegotiation of cultural interaction.⁵¹

The 'town' founded by the Virginia settlers in 1607 and the attitudes of mutual suspicion that developed between the English and the Powhatans were both symptoms of gradually expanding crises of self-image. Generosity and hospitality have become clichés of Native American culture, reified in the U.S. Thanksgiving holiday, but in fact much of the conflict between Europeans and Algonquian peoples was caused by colonial violations of indigenous gift-exchange systems which contrasted sharply with English conceptions of trade and barter.⁵² It is also clear that the colonists' attempts to 'civilise' the Native Americans were matched by a

50 See Warrick 2008, using palaeodemographic data such as hearth counts alongside archaeo-historical and epidemiological research to map the population history of the Wendat-Tionontaté (Huron-Petun). His research indicates an originally minimal adoption of maize agriculture to supplement hunter-fisher-gathering. A slow increase in cultivation can be observed from the 1300s onwards, accompanying population expansion and the move to the larger, nucleated longhouse settlements that the Europeans later encountered. This work can be best understood against larger overviews of the Huron, of which the most comprehensive is still Trigger's 1987 study. E. Jones 2010 provides comparable data for the Iroquois, indicating a drastic reduction in at least some of their populations over the decades following European contact.

51 Silliman 2009 examines an excellent case study of the Eastern Pequots of Connecticut.

52 Mallios 2006, especially 80–106.

similar ambition from the perspective of the Powhatans. In this sense, competition for resources was a far lesser factor in the subsequent Anglo-Indian conflicts than the incompatibility of their world-views, tragically coupled with the fact that neither party understood this.

In relation to social space, this wide spectrum of cultural misunderstandings and cognitive dissonance is most clearly expressed in the context of violence and conflict. In New England, following decades of escalating hostilities the process would reach its culmination after the establishment of the Pilgrim settlements and the spread of colonial occupation throughout the region. In 1675 full-scale war broke out between the English and Algonquians, with astonishingly high casualties on both sides. In relation to population size, the resulting carnage – King Philip's War – was the bloodiest conflict in American history and left more than half of the New England settlements utterly destroyed. The Native American tribes fared even worse, and the mutual savagery of the fighting left the settlers feeling that their "sense of themselves as civilised people of God had been deeply shaken".⁵³ Among the ruins were more than 25 English towns – now named as such – and the Wampanoag capital of Montaup (modern Mount Hope near Providence, Rhode Island), now dismissed by the colonists as nothing more than a scrabble of huts.

A similar process can be observed in Nouvelle France. When the French tried to re-establish their fort at Frontenac in the 1690s, the Iroquois replied, "Don't you know that your Fire there is extinguished? It is extinguished with Blood".⁵⁴ The same response was developed further a few years later when the French tried again to reoccupy the fort, known to the Iroquois as Cadaracqui. The Native spokesman, Kaqueendara, threatened the worst that his people could conceive:

"your fyre shall burn no more at Cadaracqui it shall never be kindled again [...] we quenched the fyre with the blood of your children [...] we Canossoené do say we shall never suffer you to kindle your fyre at Cadaracqui; I repeat this again and again."⁵⁵

Canossoené was the Iroquois name for themselves, meaning 'People of the Long-house' and emphasising the central ideological role of these structures. If the Iroquois saw the dampening of the home hearth as the ultimate symbol of social destruction,⁵⁶ the French had larger agendas when it came to reprisal: their armies aimed to burn entire settlements and remove populations. Shortly after Kaqueendara's speech, the French forces once again settled at Frontenac.

These disconnects, matched by technological imbalance, permeated every aspect of the colonial encounter on the eastern seaboard. However, equally crucial were the attitudes carried within the respective parties, and how they played out internally. At Jamestown, as John Smith saw it, the attitude of the gentlemen investors might be socially acceptable in England (though still contemptible to him), but in Virginia it amounted to a kind of lethal vacancy that could have dire consequences for the colony. Today we might characterise it as an instance of the

53 The effects of the war on settler and native identity have been explored in Lepore's masterly 1998 study.

54 Colden 1972, 111.

55 Quoted in Brandão 1997, 121; Iroquois beliefs on the ritual overtones of war are explored by Viau 2000.

56 Jennings 1985, 115–24.

apathetic response to trauma so often recorded in modern tragedies, except that at Jamestown it originated with the settlers themselves rather than being imposed on them by external forces. This is the core of Jamestown's initial failure, as the urban mind-set with which it was imbued simply failed to acknowledge the realities of the situation, further complicated by the impracticality of English social norms when transplanted unmodified to the New World. To this should of course be added the decisive presence of the Native Americans, whose own customs and behavioural patterns also unwittingly cut across the grain of the new immigrants from overseas.

The Jamestown colony is widely regarded – and marketed – today as the first success story of the incipient United States, the English foothold on the New World that finally held firm after so many others had been let go. While essentially correct, this overlooks the fact that the settlement's survival was ultimately owed to nothing more than what must be one of the most remarkable coincidences in world history, when the resupply ships arrived just as the colonists were leaving. As a projection of the urban mind, Jamestown was thus retrieved from utter catastrophe only by literal salvation from across the sea. This is not to underplay the astonishing tenacity of those like Smith and the few among the colonists who shared his perspectives of assimilation and effort. Nevertheless, a town in which 80% of the inhabitants starved to death within three years of its foundation, largely through their failure to break free of the mental constraints that helped to model the very fabric of its urban idea, cannot be regarded as successful. One wonders what position a truly abandoned Jamestown would now hold in the contemporary imagination, if indeed it would even be remembered.

In analysing the urban mind of the Virginia colonies, some scholars have made much of the projection of European fears and/or wistful aspirations onto a distinctly non-native view of the 'Savage', Noble or otherwise. Some of the texts and imagery from the New World are undoubtedly imperialistic in their coded messages, suggesting that despite inferior technology the indigenes of North America are 'capable of civilisation'. At least on the eastern seaboard, the casual racism of these statements obscures the blunt reality that in terms of simple survival the Native Americans often held very much the upper hand over the Europeans. Even today, when standing on the site of James Fort it can be a chilling experience to try viewing the landscape with seventeenth-century European eyes, realising that everything beyond the fragile stockade wall was alien. Despite the comforting dreams of avarice, it must have been terrifying to at least some of the settlers, at least some of the time, to understand that their tiny colony was literally a drop in the ocean of a mostly unexplored Continent. Again, this is a component in the mindset that produced a verbal urban illusion for Jamestown.

Against this alienist perspective, there are also alternative views that see the Europeans as coming to terms with a range of possible interactions with the local communities they found in America.⁵⁷ In the case of Jamestown and the North Carolina voyages, however assimilative the thinking of practical settlers such as John Smith who focussed more on empirical reality, it seems nevertheless more likely that in general the Europeans often could not absorb radical socio-cultural contrasts at the point of colonial encounter. Instead, they sought to 'domesticate' them along the lines of their pre-established cultural patterns. "Europeans only saw what they expected to see, projecting their dreams onto the open spaces

57 Rubiés 2009.

they sought to dominate, even refusing to accept cultural differences by simply assuming the universality of their own”,⁵⁸ perhaps encountering “the new in the old, altered but not fundamentally changed [...] novelty was interpreted as an extension of the old rather than as novelty itself”.⁵⁹ Given that their projections of cognitive urbanism applied to the locals as well as to themselves, there are of course also questions of moral legitimacy to consider.

The urban mind was used in early colonial America initially as a means of maintaining a sense of equality in situations where this was patently not the case, and when Europeans were at an unaccustomed disadvantage. It is surely not accidental that as the colonies became established and their foothold secured, the labelling of indigenous settlements shifted them downscale to village status while the English ‘towns’ proliferated.

Concluding remarks

Urban minds and mind-sets characterise a major part of the Old World frontier through the long Middle Ages, in a continuum from the Northern cultures after the fall of Rome to the western European opening of a New World across the sea. In almost every case the ideological and cultural structures within which people moved proved a far greater factor in the presence or absence of urban sensibilities than even the most pressing needs. At the most extreme, some of the ‘upper classes’ at Jamestown literally starved to death rather than compromise what they saw as their proper status as town-dwelling gentlemen. When these cognitive frameworks clashed with ecological and environmental conditions – the worsening climate of the early medieval North Atlantic, the socio-economics of strangers in a strange American land – the urban mind could make the difference between life and death.

In terms of sustainable urban futures, the key question must be that of success or failure in the mental landscapes underpinning these ideas, and the precise ways in which they play out within the social alternatives on offer and the environmental constraints that apply.

In the case study of English North America, we have seen how the urban mind led its inhabitants to the brink of disaster at Jamestown. The colonisers founded a ‘town’ because they needed to live in one, maintaining a comforting narrative of urban life regardless of how great the disparity between reality and aspiration. They similarly surrounded themselves with Native American ‘urban centres’ because only then could their own retain its cognitive plausibility, and thus provide the mental sustenance they required. The evolution and gradual inversion of this concept as New England developed places the urban mind at the centre of North American cultural politics in the early modern period, with implications even today for indigenous and descendant populations.

In Nouvelle France, something of the opposite occurred, as the French and other Europeans active on the St. Lawrence adapted to local circumstance, including an acknowledgement of their initial disadvantage. They appreciated the settlement complexes of the Native Americans for the socio-economic power bases that they were, but rather than overlaying elevating European labels on indigenous structures they instead relegated entire nations to mere village sta-

⁵⁸ Rubiés 2009, 122.

⁵⁹ Quinn 1974b.

tus. At the same time, their own settlements were based on a greater degree of pragmatism than those of the English in Virginia, founded without any illusions of urban pretension and with a practical eye to defence, profit and expansion. Ironically, these ambitions immediately set their colonial occupation on a path to the development of genuine trading towns along the St. Lawrence, overtaking the trade monopolies previously held by the indigenous polities. That the French clear-sightedness was a factor of prejudice, rather than the lack of it, was also what led to the enduring nature of their presence in Canada and the ultimate destruction of the local confederacies that were once the dominant force in the Eastern Woodlands. In Nouvelle France a rejection of the urban mind, that might otherwise have been naturally imported, became a vital tool of colonial power and its ruthless success.

For the first enduringly English Americans, an impractical urban vision guided their actions from the beginning. It caused the death of the majority, and paved the road to internecine Anglo-Indian conflict for a generation or more, including the bloodiest war ever fought on American soil. The urban mind came within two days of ending the English adventure there for good, and perhaps altering history.

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21. Early Urbanism in Scandinavia

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ABSTRACT

In the general picture of the Scandinavian Viking Age, the 8th-century towns are usually placed within a long-established interpretative framework that sees them as the first step in a continuous process of urbanisation, a development connected to strengthened royal power and state formation, despite the fact that they are all abandoned towards the end of the Viking Age. In this chapter the author introduces an alternative approach to this development and suggests that the abandonment of the towns was an ideological necessity. It was not spurred by isostasy or diverted trade routes as previously suggested, but by the impossibility of converting the identity of the towns to the new political order displayed by a strengthened royal power emerging around the turn of the first millennium. The *town relocation process* of development should thus not be seen as a natural chain of advancement and evolvement of functions, but as an expression of conflicting politics.

In the first half of the 8th century AD the first urban communities began to appear in Scandinavia, and by the end of the century a network of permanently settled trading towns had emerged along the Baltic Sea and in Russia (Fig. 1). These communities were distinctly different from the contemporaneous rural centres, where trade as well as administrative and sacral functions were affiliated with a wealthy farm that had social domination over a large area. In size, layout, density of population, and concentration of functions, the 8th-century towns represented a new structure in the Iron Age society and landscape.

Two general phenomena have been identified by scholars as the driving forces behind the initiation of an urbanisation process in northern Europe, namely intensified trade and state formation. These interpretative conditions were established already in the 1930s¹ and have since gone virtually unchallenged. The connection between the formation of towns and increased trade is well supported by the archaeological remains; the geographical locations of the towns as well as the artefact material they display clearly imply an orientation towards trade and crafts. Royal influence, on the other hand, is harder to assert archaeologically.

The basis for this explanation is not to be found in the prehistoric material, but rather in a preconceived scholarly comprehension of the social preconditions

¹ Arbman 1939.

Fig. 1. The first generation of towns in Scandinavia.



for urbanisation,² supported by the known fact that, in the course of history, the Viking Age society evolved into a medieval one where the different Norse kingdoms were recognised as strong political units. The emergence of urbanism, as one of the first visible steps towards modern society, has come to represent the symbolic breaking point between prehistory and history, that is, between the primitive and the modern. Town and king are also connected by the fact that the right to found towns was a regal privilege in the Middle Ages,³ and this relation is simply assumed to be true for the previous period as well, without further analysis of the matter. There is, however, no empirical evidence to support this deduction. Instead, there are elements in the archaeological material to suggest that the 8th-century towns made up defined, self-sufficient communities and fairly autonomous social units.

The focal point of this chapter, however, does not lie in the social transformations that led to the formation of the towns, but rather in the disappearance of the towns. With the exception of Staraya Ladoga in Russia, the Norse 8th-century towns were all abandoned towards the end of the Viking period; Staraya Ladoga lost its dominating position around the same time, however. None of these towns shows an unbroken continuity in settlement to indicate they developed into medieval cities. Despite this, the desertion is not interpreted as a significant disruptive phenomenon leading to discontinuity; on the contrary, an undisturbed social continuity has been claimed. The abandonment of the towns is seen as the result of naturally imposed coincidences, and since a medieval town can in most cases be found in the close vicinity, this succession has been interpreted as a natural development based on local conditions. Continuation is thus explained

² Schorske 1998, 39.

³ Ros 2001, 19.

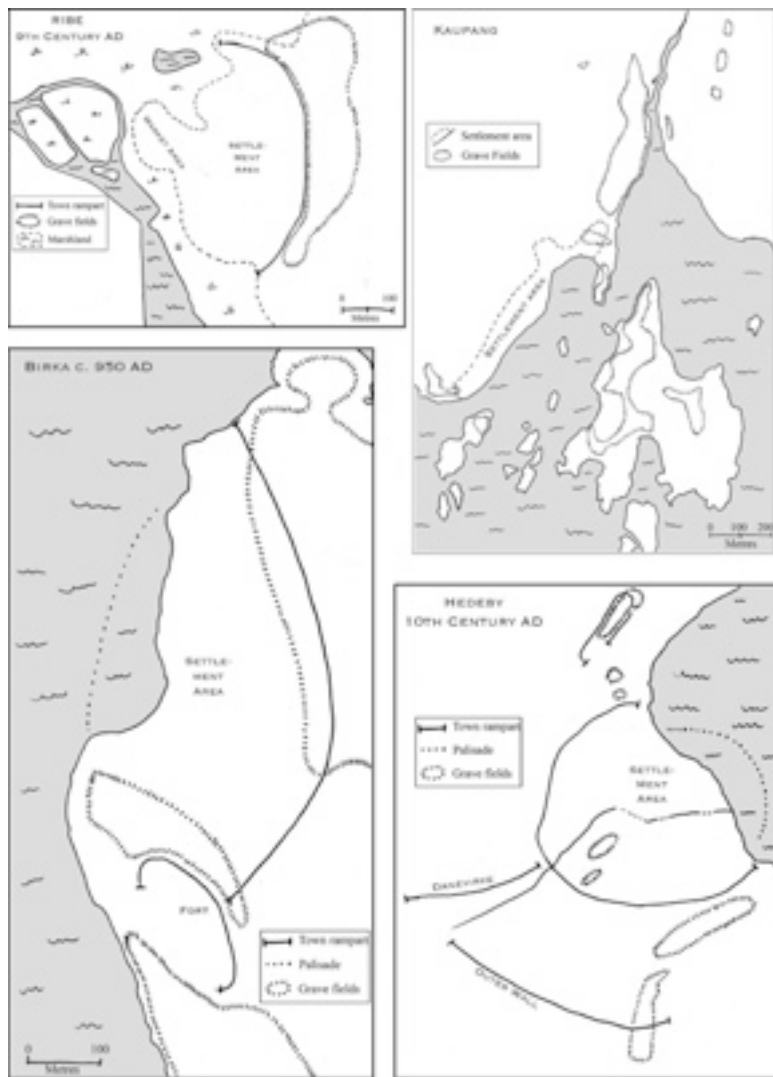


Fig. 2. Town plans over the four Viking Age towns in their late settlement periods. Note the similar organisation with grave fields in the outskirts of the settlement. Plans made by Carolina Hillerdal based on plans in Feveile 2006b, Pilø & Skre 2008, Ambrosiani & Erikson 1996, Crumlin-Pedersen 1997.

by relocation. However, the archaeological material does not support these environmentally bound explanations, nor is the process of continuation evident in the material practices. The discontinuity in town location, as well as function, should instead be seen as the result of a significant ideological break with tradition and thus as a noteworthy step in the social development of late Iron Age society.

Urban centres of the Scandinavian Viking Age

Four Viking Age settlements in Scandinavia differ markedly from others during this time with respect to size, layout and function: Ribe, Hedeby, Birka and Kaupang (Fig. 2). These settlements, or towns, have their counterparts by the great rivers in inland Russia, namely in the towns of Staraya Ladoga, Rjurikovo Gorodishche and Gnëzdovo. The archaeological material from these towns shows great similarities, from Kaupang in the west, to Hedeby in the south, Birka in the north, and Staraya Ladoga in the east; for instance, the pottery, comb and bead materials are all very similar. This has led to the conclusion that the towns all belong to the same craft and cultural sphere.⁴

⁴ Ambrosiani 1997, 113.

There is disagreement among scholars on whether or not these early towns can really be interpreted as towns, since they evidently lack some of the features used by historians as criteria for the definition of a town, such as an administrative function.⁵ As an argument against this claim it has been said that the functions of all towns are always contextual and time bound, and therefore no universal definitions for what constitutes a town can be established. Neither can archaeologists adopt the criteria used by historians, since these criteria depend on functions established through written records. Susan Reynolds' definition is often referred to for a general characterisation of towns.⁶ She defines a town as a permanent settlement displaying two essential attributes. Firstly, a significant proportion of the population should have a non-agricultural mode of subsistence such as trade, industry and administration. In addition the inhabitants should be engaged in a variety of occupations. Secondly, a town should form a social unit more or less divergent from the surrounding landscape. A town is also likely to serve as a centre for its hinterland, generally in marketing.⁷ If these criteria are decisive, the 8th-century settlements can all be called towns.

Despite this broad definition, some researchers have instead chosen to use the term "proto-towns" for the Viking Age towns of Scandinavia.⁸ No matter which term is used, however, these early urban centres all represent a new phenomenon in Scandinavian society that clearly contrasts with rural occupation in being densely populated, highly specialised, and directed towards trade and craft production. None of the towns is adjacent to a significant agrarian settlement. The towns are also distinct from earlier trade and crafts centres in their size, permanent character and occupation, as well as by the fact that they have significant burial grounds. In their established stages, the towns demonstrate intentionality in their spatial divergence from their rural surroundings, suggesting a conscious manifestation of difference.

Towns are often perceived as a foreign import introduced as a finished idea into Norse society,⁹ and urbanisation is thus seen almost as a disturbance of local conditions.¹⁰ This represents a rather isolationistic perspective on culture, as it rests on a notion whereby cultures are delimited units following their own paths and interaction with the foreign is a rare and peculiar business. It also implies an interpretation whereby a founding father, for example a king, can introduce a foreign element to the indigenous development, whereupon the local initiative is lost in favour of foreign perspectives. These ideas somehow alienate the towns from the cultural sphere to which they belong, and present them as the bridge between the old-fashioned Iron Age Scandinavia and the evolved Europe, the community that "bound together the local and the outside worlds".¹¹ However, a living community is not made up by an idea, but by the people living it. The cultural practice of everyday life created the sense of affinity that formed a town community, as the "daily practices [...] created a sense of place".¹² The early towns as deviating physical phenomena and as self-sustaining units created a daily practice different from that of the farm and rural areas. The social identity created by the everyday life of the people inhabiting

5 E.g. Callmer 1994, 51f.; Olausson 2002, 168ff.

6 E.g. Clarke & Ambrosiani 1993, 10; Palliser 2000, 5; Skre 2008c, 84.

7 Reynolds 1977, ix.

8 E.g. Olausson 2002.

9 E.g. Rosberg 2009, 64f.

10 E.g. Ambrosiani 1985, 111.

11 Ambrosiani 2008, 99.

12 Hodder 2003, 86.

the towns should therefore not be ignored in an analysis of their impact on late Iron Age society.

As a new social phenomenon in Norse society, the early Viking Age towns display many similarities as well as singularities. Some common traits distinguish them from their hinterland. The spatial organisation as well as the economic structure reveals a way of life different from that of rural settlements. The cultural practices in the milieu of the early towns also differ from those of their rural surroundings. The archaeological material reveals that the towns formed separate communities organised in a particular way, different from the organisation of the rural central places.

Founded shortly after AD 700, Ribe is the earliest of the documented trading towns. The town of Ribe is mentioned in the annals as early as the 9th century, and the city still exists today. Archaeologically, however, present-day Ribe can only be dated back to medieval times. Viking Age Ribe, although known to exist from the written records, was not located until the 1970s when archaeological remains dating back to the Viking Age were found on the opposite, northeast bank of the Ribe River.¹³

Ribe was initially established as a seasonal market place, and it developed into a permanent settlement in the second half of the 8th century. Judging from the archaeological material the town continued to exist until the late 9th or the beginning of the 10th century, after which there is no convincing archaeological evidence of occupation until the mid-11th century. It appears as though the town vanishes for well over a century before reappearing, this time with its central functions on the opposite side of the Ribe River.¹⁴

The material evidence thus suggests that Ribe either disappeared entirely or moved to another location, yet to be found. The relocation theory has been favoured in interpretations,¹⁵ not least since the town is mentioned as an Episcopalian residence in 10th-century sources.¹⁶ However, there are no indications as to where that town site would be. It seems just as probable that the name lived on as a bishopric, affiliated, for example, with a farm. Tenth-century Christian graves recently found on the south side of the Ribe River may indicate the location of an early church.¹⁷ This find supports the idea that the name of the town as well as the tradition could have been preserved in small-scale church activities, which might have contributed to the relocation of the town to that site in the 11th century.

The town of Birka is first mentioned in Rimbert's *Vita Ansgari*, written in the 870s,¹⁸ as an important trading town of the Svear. The towns of Ribe and Hedeby are also referred to in this account. The foundation of Birka has been dated to the mid-8th century, and it is generally believed that the town was deserted around AD 970, although later dates of abandonment have been suggested.¹⁹ Birka's functions are thought to have been taken over more or less immediately by the town of Sigtuna, which was founded in c. AD 980 about the same time as Birka was vacated.²⁰

13 Feveile 2008, 126.

14 Feveile 2006a, 31f, 52f.

15 Feveile 2006a, 53.

16 Feveile 2008, 126.

17 Søvstø 2009.

18 Ahnlund 1926, 5.

19 Ambrosiani & Eriksson 1996, 42.

20 Ros 2001, 15.

The occupation in Hedeby is thought to have begun in 808, when the merchants were moved from Reric on royal initiative,²¹ and the town was supposedly destroyed in 1066. Dendrochronology dates the town between 811 and 1020.²² Hedeby was located in a border zone between two different provinces, something that most likely contributed to the town's character and its important position in the trade network.²³

The occupation of Hedeby seems to decline after the turn of the millennium; for instance, no traces of activity beyond the year 1000 have been found in excavations in the craftsmen's area of the settlement. Excavations indicate that activity also came to an end in the harbour area in the early 11th century.²⁴

Parallel to the decline of the settlement of Hedeby, the centre of urban activity in the region seems to move to the northern bank of the Schlei River and the town of Schleswig; the earliest date from this site is 1070.²⁵

The town of Kaupang is mentioned as Sciringes heal in the Norwegian traveller Othere's account of his journey to England along the coast of Norway, dated to c. 890.²⁶ Excavations show that the market place at Kaupang was founded in AD 800.²⁷ The initial settlement at Kaupang appears to have been seasonal,²⁸ but it was made permanent five or ten years later.²⁹ The occupation at Kaupang continued into the second half of the 10th century, and on the basis of artefact finds 960/980 has been suggested as a probable date for the end of the occupation at the site.³⁰ In the case of Kaupang, no direct "heir" can be found, and there is thus no succession of towns in this part of Scandinavia.³¹

It is clear that this pattern of discontinuity in urban development is also found in Russia. The town of Staraya Ladoga is virtually contemporaneous with Birka, settled in the mid 8th-century. Ladoga held its position as the most important trading centre of the region into the 10th century, after which this position was lost.³² In medieval times Novgorod was the political and commercial centre of north-western Rus. However, excavations have revealed that the present-day city of Novgorod was not settled until the mid-10th century. Its predecessor has been located to Gorodishche, two kilometres south of the city. This town was settled in the mid-9th century, or a little earlier, and was deserted around the year 1000.³³ The town of Gnëzdovo, situated 13 kilometres west of the present-day city of Smolensk on the right bank of the river Dnepr,³⁴ was settled in the 9th century and occupation continued into the 11th century.³⁵

21 Garipzanov 2008, 130,

22 Schietzel 1985, 187f.

23 Marold 2001, 13ff.

24 Crumlin-Pedersen 1997, 43f.

25 Schietzel 1985, 179f.

26 Skre 2008b, 112.

27 Skre 2008b, 212.

28 Pilø 2007b, 193,

29 Pilø & Skre 2008, 22.

30 Pilø & Skre 2008, 22.

31 Skre 2008a, 85.

32 Kuz'min 2000, 130–135.

33 Jansson 1997, 31, 35.

34 Androshchuk 2008, 526,

35 Pushkina 2004, 45.

A question of continuity?

Two waves of urbanisation can be identified in Scandinavia and related regions of north-eastern Europe. The first took place in the 8th and 9th centuries and is characterised by the founding of several early market towns. The second wave of urbanisation swept over northern Europe a few centuries later, starting around the turn of the first millennium AD. The towns of the second phase still exist today; this is in contrast to the Viking Age towns of Scandinavia, none of which developed into a medieval town, even though a medieval town can often be found in the close vicinity and in the case of Ribe only as far away as the other side of the river. This development of succeeding urban communities has usually been described as a continuous phenomenon, and the decline and abandonment of the first generation of towns is explained by local conditions such as changing trade routes, aggradation, or new ship building technology that demanded deeper harbours.³⁶ One explanation offered for the short existence of the towns is that, since the Viking Age towns were entirely built of wood, the economic setback of abandoning a town was not substantial and therefore it was easy to relocate a town when geographical or other conditions changed. Not until the official buildings and churches were built of stone was the economic loss considerable enough to make a town site permanent.³⁷ These explanations all strive to downplay the importance of the observable discontinuity in location and dismiss it as insignificant. Despite the fact that the early towns had all disappeared by the early 11th century, scholars have mainly perceived the lack of continuity of the towns as a general phenomenon only in the light of the particular.

Data from recent archaeological excavations demonstrate that the external factors on which these explanations are based are not sufficient to explain the phenomenon. The geographical locations of the succeeding towns are not notably more advantageous, inasmuch as the new settlements are usually found in a similar maritime situation as the Viking Age towns. Landing conditions, for example, are similar at Birka and Sigtuna, and Ribe reappears in virtually the same location as before – well over a century after its abandonment. The fact remains, however, that the towns were all deserted at virtually the same time, and thus the explanation for this should be sought elsewhere.

Urbanisation in the early 8th century is usually explained as initiated by intensified trade in combination with specialised domestic production, leading to a natural transition towards more advanced functions in the central places. Before the emergence of towns, centralised trade functions were concentrated to a few aristocratic farms, evidently operating as centres for long-distance trade and distinguished by exceptionally rich and exotic archaeological material. Examples of such centres are Helgö, Dankirke, Tissø and Lejre. However, this was craft production on a rather small scale. When craft specialisation increased and expanded, in many cases towards mass production of goods, it moved from the predominantly rural settlements to the emerging towns with refined craft and trade functions, such as Birka and Ribe. After a few centuries, the trade functions of these towns were in their turn relocated to new sites in the late Viking Age/early medieval period. It has therefore been possible to view this process as a continuous chain of successive regional central places, such as Helgö – Birka – Sigtuna,

36 Clarke & Ambrosiani 1993, 79f.

37 Clarke & Ambrosiani 1993, 121.

Dankirke – Ribe – Ribe, and Reric – Hedeby – Schleswig.³⁸ The advancement of urbanism is thus traced through trade and explained as a continuous evolvement towards more developed markets, with the activity moving from farms to Viking Age towns, and in the end taken over by a more advanced medieval successor.

It is clear from the locations and layouts of 8th-century towns that water transport was a decisive factor in the choice of location. They all have strategic positions from a commercial point of view, and the harbour area is the natural focal point of the town as well as the centre from which the whole street system emanates, at least in the cases of Birka, Hedeby and Kaupang.³⁹ Since the maritime conditions are so crucial in the early stages of the towns, it is only natural that the most favoured explanation for the termination of the towns is found in these conditions as well.

The “relocation” of Birka to Sigtuna has been explained by a change in the trade route owing to isostatic uplift in combination with new shipbuilding technology,⁴⁰ and the desertion of both Kaupang and Hedeby has been given a similar explanation.⁴¹ From a synoptic point of view this theory might seem plausible, since the Middle Ages represent a shift in Norse shipbuilding technology from the Nordic tradition of clinker-built ships to the flat-bottomed cogs of western European type. This explanation does not hold ground, however, as the shift does not synchronise with the disappearance of the Viking Age towns but instead occurs several centuries later. Nor does it seem likely that ships of the Nordic tradition exclusively frequented the trade routes of the Baltic Sea. The earliest archaeological find of a cog dates to the 12th century, but the ship type is mentioned in written sources already in the 9th century. Indirect evidence of the presence of the cog already in Viking Age Scandinavia is the name “Kugghamn”, cog harbour, for the area north of the main town harbour of Birka, as well as finds of cog-nails on the island of Adelsö.⁴² It is generally assumed that the Frisians used ships of cog type for their trade with Scandinavia, even though the Scandinavian trade was dominated by clinker-built ships of Nordic tradition which then developed into large cargo ships during the 11th–13th centuries.⁴³ All together, this indicates that the towns had the capacity to accommodate other types of ships as well.

The largest Nordic cargo ship known, with a carrying capacity of 60 tons, dates to 1025 and was found in the harbour of Hedeby,⁴⁴ a fact that contradicts the argument that the 11th-century ships would have been too large for the harbour and thus forced the move to Schleswig. In the case of Kaupang, the harbour basin did become somewhat shallower over the years of the town's existence, but it still had a depth fully sufficient for the ships of the time.⁴⁵

The large cargo ships of the 11th century were part of a general development in ship technology at the turn of the millennium. The longships used specifically for warfare, which are usually connected with the Vikings, did not develop until the 11th century when there was a clear division between cargo ships used for

38 E.g. Clarke & Ambrosiani 1993, 79; Müller-Wille & Tummuscheit 2004, 27.

39 Hillerdal 2009, 223.

40 E.g. Ambrosiani 2008, 98.

41 E.g. Clarke & Ambrosiani 1993, 79f.; Schietzel 1985, 179f.

42 G. Larsson 2007, 114f.

43 Crumlin-Pedersen 1997, 36, 197.

44 Crumlin-Pedersen 1997, 197,

45 Skre 2008a, 85.

trade and longships designed especially for warfare, with less carrying capacity for goods but more for men. Before the 11th century the specialised functions had been less pronounced and the same type of ship had been used for both purposes.⁴⁶ This development may naturally be connected to changing demands on function made by both economic and regal elements, and thus reflect the changing social structures in late Viking Age Scandinavia.

The traditional interpretations, exemplified above, explain away discontinuity in an extemporized fashion and result in a smooth chain of development from the Iron Age rural central place to the medieval town via the Viking Age urban centre. This linear trend has been criticised as ahistoric, as the Viking Age and medieval towns in this interpretation are all given one context where trade is the omnipresent dominating factor, thus explaining function as well as development.⁴⁷

The process of continuity has also been questioned in the earlier transitional stage, between rural and urban central place. For instance, it has been suggested that Dankirke, instead of being the predecessor of Ribe, represented an old system that was superseded by the specialised new market. It was thus not continuation but competition that resulted in the development of Dankirke – Ribe.⁴⁸ A similar development could explain the abandonment of the towns two centuries later.

Continuity should be asserted through purpose and position in society: if a medieval town immediately takes over the character of its predecessor, continuity can be claimed; otherwise the town must be understood as abandoned in one context and recreated in a new one. The medieval archaeologist Anders Andrén emphasises the discontinuity in town location, but points to overall continuity in the area. On a larger scale the towns' regions can thus be considered central areas that gained their position either strictly because of environmental and geographical factors, or because of social conditions. An interpretation that takes its basis from discontinuity thus allows the geographical break to be significant for the development, as an expression for changing conditions as well as functions. It gives the reorganisation of towns a more radical importance and views the medieval towns as something ideologically different from their Viking Age "predecessors". It is thus the demand for altered central functions that comes to the fore in a reorganisation resulting in medieval towns.⁴⁹ We could then consider the possibility that the towns represent a large-scale continuity that takes its expression in discontinuity, and that there are two different levels to this development. Firstly, it can be stated that the continuity lies in the development towards larger unified powers; and secondly, that in this expansion the discontinuity of single trading towns was unavoidable. This explanation is based on the notion that the 8th-century town and the 10th-century town belong to different, conflicting traditions in society.

If the contemporaneous discontinuation of the towns is allowed significance, and is discussed as a noteworthy step in the historical development, alternative interpretations can be made. The Viking Age represents a clear interim period, and in periods like this it is easier to identify identity-building practices in the material culture since they can be recognised as separate. In the disappearance

46 Andersen 2010, 10.

47 E.g. Andrén 1985, 15f.

48 Jensen & Watt 1993, 199.

49 Andrén 1985, 17f.

of the town it is possible to observe trends that suggest an ideological conflict between two different tendencies: a locally established trend in concurrence with an overseas trade network, and a territorially based nationalising narrative.

I propose that Viking Age towns formed autonomous societies, with little ideological dependency on king or hinterland. This autonomy was the determining factor when they were dismissed and relocated by a new “national” royal power towards the start of the new millennium. The history of the townspeople had to be rewritten to fit into medieval society; the people could no longer be allowed to work within a system of their own founded on traditions of the old social order of the late Iron Age, but instead had to submit to the hierarchical order of the king and his realm.

A conflict of traditions?

The emergence of the towns of the 8th century has been seen as evidence that royalty had gained power and taken sole control over long-distance trade, a control thought previously impossible to exercise. This interpretation can be justifiably criticised, however. As long as continuity is seen as the central point in town development, foundation and relocation are as such perceived as two sides of the same coin; the town founded on royal initiative is moved by the same initiative when the functional conditions for its location are changed. The town as a social phenomenon thus manifests a preconceived idea of continual development. Looking to the material, however, a diverging pattern can be identified.

In the 4th to 7th centuries, several rich rural communities whose wealth seems to depend on control over trade and craft production emerged in southern Scandinavia. Examples include Gudme, Lejre, Tissø and Stavnsager in Denmark, and Uppåkra in Scania. These rural central places, where trade and manufacture played an important role, differed from the early urban centres in that they also farmed, and these central places formed a pattern with a proper centre and several satellite settlements. The layout of these settlements is virtually indistinguishable from that of ordinary rural villages. These central places have a pronounced high-status character and probably also sacral and administrative central functions,⁵⁰ none of which seems to be visible in the layout and function of the 8th-century towns, which appear strictly oriented towards trade and crafts.

It is evident that social hierarchy was based on land in the late Iron Age society.⁵¹ The farmlands were the conditions on which their owner's social position rested,⁵² and the rural centres formed the core of a larger settlement area.⁵³ The largest late Iron Age farms found in Scandinavia are Lejre and Tissø on Zealand, Denmark, Järrestad in Scania, Sweden, and Borg in Lofoten, Norway.⁵⁴ These farms seem to represent the same tradition of elite residence complexes. Järrestad, Lejre and Tissø all emerged in the 6th century and survived into the 11th

50 Hamerow 2002, 157, 160, 165; Fabech 1999, 457; Høilund Nielsen & Loveluck 2006, 63, 76; http://portal2.nottingham.ac.uk/archaeology/research/central_stavnsager.php

51 E.g. Brink 1999, 424.

52 Herschend 1999, 333.

53 Fabech 1999, 469.

54 Fallgren 2008, 70.

century as exceptionally rich rural centres,⁵⁵ and thus continued to exist parallel to the first urban centres. The large farm at Borg was founded in the 5th or 6th century and declined in the second half of the 10th century.⁵⁶ These settlements are distinguished by their size, their rich and exotic archaeological material, and by traces of craft production and long-distance trade. They also filled a function as cultic centres.⁵⁷ Excavations at Tissø have shown extensive market and craft areas, with evidence of iron forging and bronze casting. Finds of hack silver and Arabic coins indicate contact with long-distance trade networks. The market was clearly seasonal as the excavations revealed intense use during short periods of time, with transient occupation in the market or craft production areas.⁵⁸ These farms can be seen as parts of a social organisation that took shape in the second half of the millennium and that was based to a higher degree on territory and less on person.⁵⁹

In this light, it is noteworthy that none of the trading towns are located close to these richer rural centres. Instead the towns are found in connection to rural centres of lesser influence such as Helgö and Dankirke. Whilst the important central places of Tissø, Lejre and Stavnager maintain their central character into the 11th century, Helgö loses its significance after 900, when the hall dating back to the 8th/9th century disappears and is replaced by a building of different type.⁶⁰ The functional importance of Helgö seems to have been taken over by Birka, but only when it comes to trade and crafts. This development implies competition rather than continuity, and suggests weak local expression of royal power. This is not least because the royal influence over the towns is doubtful, not to say non-existent, to judge from the archaeological material.

It can be argued that the early town communities grew from a well-known structure in the Scandinavian landscape, as there are elements in the archaeological material suggesting that the towns initially were organised in line with the old idea of a seasonal market place next to a residential settlement of rural character. An early occupation of rural character has been recorded in connection to each of the towns, and several towns show signs of an initial seasonal use of the market area before the introduction of a permanent settlement. It therefore seems plausible that the towns represent a development of the old market idea, and this is also supported by the fact that the sole function of the towns seems to be trade and craft production.

This pattern is most evident in Ribe. Founded after the turn of the 8th century, Ribe was initially used as a seasonal market place with recurring markets, and it did not develop into a permanent settlement until the second half of the 8th century.⁶¹ By the mid-8th century, there are traces of more permanent structures on the plots in the market area, indicating that the seasonal occupation had developed into more permanent year-round occupation. Contemporaneous with these structures is a permanent settlement of more everyday character east and south-east of the market place, and less trade- and craft-oriented than the market place. These houses are similar in shape and size to other rural buildings

55 Jørgensen 2009, 338, 344, 346.

56 Johansen & Munch 2003, 13.

57 Jørgensen 2009, 338–346; Johansen & Munch 2003, 17f.

58 Jørgensen 2008, 81f.

59 Brink 2008, 106.

60 Jørgensen 2009, 335.

61 Feveile 2006a, 31f.

in Denmark, even though the structure of the settlement differs and seems to have been adapted to the layout of the market. Graves from the first half of the 8th century indicate that permanent settlement may have been established even earlier in the area.⁶²

In Birka, several terraces situated on a slope above the town, along the later town rampart, reveal an area containing longhouses of the type characteristic of the contemporaneous rural occupation of central Sweden. This occupation was present in the initial stages of the town's existence and seems to have disappeared by the mid-9th century.⁶³ Recent excavations have also revealed a settlement south of the town, contemporaneous with the early town occupation. The two buildings have been dated to the latter part of the 8th century and the occupation lasted to the second half of the 9th century. Even though the building type seems to match the buildings on the town plots, the archaeological material is more of an ordinary character and apparently not connected with crafts or trade.⁶⁴

Although the town of Hedeby has been dated to the early 9th century, the earliest traces of activity at the site date back to the 8th century. Dendrochronological dates reveal that the first jetties in the harbour area were built in the first half of the 8th century. No traces of activity contemporaneous with these jetties have been found inside the town rampart, but south of the town is a settlement and a burial ground which are dated to the 8th century and which are probably connected with the first jetties. Excavations have revealed a longhouse and associated sunken dwellings. This settlement coexisted in its later phase with the early phase of the town of Hedeby but was abandoned during the 9th century.⁶⁵ It is quite possible that the harbour can initially be associated with market activity of seasonal character like in Ribe or Kaupang, even though no traces of this have been located archaeologically.

The market place of Kaupang was founded around the year 800. It is, however, possible that the landing site was in use by the nearby royal complex of Skiringsal before this time. The initial market activity at Kaupang appears to be seasonal as there are no signs of permanent settlement during the first years of use. However, we know from the archaeological material that after five to ten years the occupation turned permanent.⁶⁶

Only the central part of the site of Kaupang was divided into regulated plots similar to the other trading towns. In the north-western part of the settlement is an area with settlement features that differ from the rest of the town. It has been suggested that this settlement predates the Kaupang complex by centuries, but this is not certain. Traces of ploughing with an ard have been found under the burial ground of Lamøya, and there is evidence that some clearance of pine had taken place in the area at the beginning of the 8th century.⁶⁷

Similar developments can be observed on the other side of the Baltic Sea where the first occupation of Staraya Ladoga in the mid-8th century reveals buildings similar to Scandinavian longhouses, gathered in a small settlement and resembling more a large property than a town.⁶⁸ However, the excavated material

62 Feveile 2006c, 259.

63 Ambrosiani 2008, 96; Holmquist–Olausson 1993, 100, 116, 119.

64 Bäck 2009, 267f.

65 Müller–Wille & Tummuscheit 2004, 33.

66 Pilø 2007a, 172; Pilø 2007b, 193; Pilø & Skre 2008, 22.

67 Pilø 2007a, 168f., 175.

68 Kuz'min 2000, 129f.

reveals that trade and crafts were important functions already in the first stages of settlement,⁶⁹ before the settlement began to expand into a regular trading town around AD 780.⁷⁰

The rural type of occupation has not been directly connected with the development of the Scandinavian towns, but implications of this form of settlement in all these cases could suggest a development whereby the town grew from a well-established pattern in the Scandinavian Iron Age landscape, with a seasonal market organised by a larger farm, and then gradually evolved into a new kind of independent community. The old idea was, however, abandoned in the town's continuation, as the occupation of rural character evidently disappeared. It is apparent that the societies developed in their own right, and even if there was an initial, traditional idea of separating market and settlement it was abandoned after some generations.

A substantial break with tradition can be deduced from the abandonment of these towns two centuries later, if the discontinuity is acknowledged as a conscious political decision.

To judge from the archaeological material, the main, if not the only, function of the early towns seems to be trade and crafts. This differs from the succeeding towns, where, like in the rural central places of the late Iron Age, several other functions are included in the town, not least ecclesiastic such. The earliest phase of Sigtuna, the presumed successor of Birka, even has a lack of craftwork, as reflected in the scanty debris from craft production in the oldest layer, during a time when craftsmen were periodically active in the town.⁷¹ This implies that, even if the intention was for Sigtuna to take over this area of activity from Birka, it took some time to reorganise these functions according to the new idea. The lack of administrative and sacral institutions in the late Iron Age urban communities demonstrates that they were not needed there. These powers were still controlled by the royal families based in the rural centres. The power of the urban centres was restricted to the economic sphere. As such, however, they gained an independent position that formed a potential threat when a new and uniting national power aspired to take over.

Sigtuna displays other, major differences from its predecessor. From the layout of the town it can be concluded that Sigtuna represented a type of town different from Birka, as exemplified by the fact that the town was centred around a main street instead of focused on the harbour, and that sacred and profane power was present in the town plan through monastic buildings, churchyards and palaces. The explicit purpose of trade and crafts gave way to explicit regal and sacral functions.⁷²

The idea that Sigtuna was a direct successor of Birka is also contradicted by the building patterns and techniques, as well as the lack of specialised crafts in the earliest stages of the settlement. The early buildings of Sigtuna were heterogeneous in disposition as well as technique, and reveal a reduction in quality of workmanship compared to Birka. The layout has led to the interpretation that the Sigtuna plots were developed by different families from the countryside, who had acquired the land from the king as a sign of allegiance.⁷³ The population of

69 Franklin & Shepard 1996, 15.

70 Androshchuk 2008, 520.

71 Ros 2008, 142.

72 Rosberg 2009, 85.

73 Rosberg 2009, 80f, 84f.

Sigtuna thus differs considerably from the traders and craftsmen who formed the community of Birka.

The lack of administrative and sacral functions in the late Iron Age towns should not be seen as an underdeveloped form of urbanism, as it is evident that these were not the expected functions in the towns themselves. It should also be noted that the rural centres involve both the administrative and sacral central functions later found in medieval towns.⁷⁴ It is therefore not an absent concept, especially since several rural centres kept their important position well into the 11th century. The absence of these functions in the 8th-century towns is thus a consequence of lack of expectation or need.

Continuity has especially been claimed in the case of Ribe, since the town still exists today. It is, however, evident that this continuity cannot be claimed in the landscape since the town occupation had clearly disappeared by the early 10th century and the area was abandoned. When the town was reoccupied in the 11th century it was organised according to an entirely new structure of plot division.⁷⁵ Tendencies similar to this might be present in the town of Århus, where excavations at the Viking Age town rampart, dated in its oldest phase to AD 934, revealed a preceding occupation organised into plots along the river. The oldest sign of activity at this site is a ditch measuring 2.5 m wide and 0.5 m deep, which probably dates to the mid-9th century. This ditch has been interpreted as the judicial limit of the town, similar to that of Ribe, and some houses within this delimited area are likely to date back to the late 8th century. In connection with the construction of the rampart this earlier occupation had been cleared and the buildings evidently torn down.⁷⁶ This implies a reorganisation of the town occupation, as a conscious decision by a dominating power, which in turn indicates a new order and probably a new ideology connected with town function and organisation.

There is an overall development in Iron Age society towards more solid social organisations based on territory and leading up to the formation of national powers in the Middle Ages,⁷⁷ but in the interpretations this has led to a homogenisation of the process whereby the Viking Age towns have been seen as a link in a direct continuation.

The abandonment of Viking Age towns is echoed in a discontinuity of the rural central places, which also disappeared towards the end of the era. This indicates more comprehensive societal changes as well as a change in the power structures of society, which has often been ascribed to religious change and Christianity⁷⁸ but which should probably also be connected with the new ideological order of a consolidating monarchy.

In this development, the 8th-century towns should thus instead be seen as a step between an old and a new social order, where new economic opportunities presented in this context gave the towns the possibility to grow into independent units and consequently into power factors that could challenge the prevailing order and the traditional power balance, thus enabling them to evolve into autonomous communities beyond royal control. The perceived chain of development should thus not be seen as a result of continuity but divergence, and the different

74 Fabech 1999, 470.

75 Feveile & Jensen 2006, 89; Feveile 2006b, 197f.

76 Larsen 2006, 3f., 7–13.

77 Brink 2008, 111f.

78 Skre 2008a, 86.

types of central places in this development should be understood as representatives of conflicting traditions rather than evolvement. The abandonment of the Viking Age towns is thus the result of a new social power taking control over the larger social context. The consolidation of a royal power should consequently be ascribed to the time of the second wave of urbanisation, two centuries later than it is generally assumed to have taken place, and it is also manifest in the very layout of the early medieval towns. The 8th-century towns, on the other hand, have their roots in the market areas in an established social landscape, but the new economic situation following the expansion of trade created opportunities for the towns to break free from this pattern and consequently made them an interim phenomenon.

Material indications of autonomy

A common argument in support of the idea of a royal initiative behind the 8th-century towns is their regulated town plans and plot division. This type of regulation of the land suggests an initiating force, as well as someone deeding their land for the purpose of market. Plot divisions are thus interpreted as an expression of royal involvement, and as such a royal vision of the conceptual town, land control and state formation. The town is seen as a complete idea brought in from abroad by informed nobility.⁷⁹ Plot division *per se* is, however, not a new phenomenon in the Scandinavian Iron Age. Contemporaneous as well as earlier sites with clearly defined plots have been excavated in Scandinavia, as exemplified by the 8th-century village of Vorbasse and the 5th-century village of Præstestien, both in Denmark, and the fortified village of Eketorp on Öland, Sweden.⁸⁰

While plot division suggests a conscious initiative⁸¹ as well as a market intention, it does not necessarily imply that a royal power lay behind the initiative. Distribution of equal-sized plots suggests a limited area available and implies a division based on the idea of equal conditions for all participants. The social stratification visible in other parts of society was not built into the layout of the towns and was obviously not part of the idea, since the concept of plot division was kept intact when the settlement area was expanded.⁸² Instead, the 8th-century towns seem to have been organised according to an economic idea of market and equal access to trade. Social power was not expressed in the structural design of the town, something that also argues against a significant royal interference. The king was not materially present in the towns, in contrast to the later medieval towns where both the profane and the sacral powers left their mark on the urban layout and architecture. This egalitarian notion is also very different from the surrounding rural society, where wealth and power were explicitly manifest in the size of land and the layout of buildings.⁸³

Not only the layout but also the buildings of the towns differ from those in the surrounding rural areas. Despite being permanent residences, the town buildings do not seem to be constructed with the same care and attention as rural houses, possibly indicating that they were not expected to last for the same

79 E.g. Rosberg 2009, 64f.

80 Hamerow 2002, 57f.; Edgren & Herschend 1995, 5–9.

81 E.g. Herschend 2009b, 27.

82 E.g. Birka, Rosberg 2009, 60.

83 Fallgren 2008, 69.

length of time.⁸⁴ They are adjusted to the plots and considerably smaller than rural houses, and built in a technique new to the area. The new types of buildings are adapted to the specialised function they fill and to the way of life in the town. Traditional building techniques were intentionally set aside in favour of more suitable techniques. This can be interpreted as the act of a population aware of their singular position, asserting themselves as something other than the surrounding rural society, especially since the stratified society is not visible in the buildings. Houses as well as plots show evidence of having been rebuilt in the same locations for generations. The overarching idea of the plots regulates daily life; and behind the plot concept we should seek a context of equal economic opportunities for everyone participating in the trade.

The first towns lack the administrative function for its hinterland that is often considered a criterion for the definition of town,⁸⁵ and thus it seems evident that, in contrast to the second generation of Scandinavian towns, the first towns emerge on an economic initiative and solely function around the market. The urbanism encountered in Byzantium and Europe is as such translated into Norse conditions. This is, for example, supported by the fact that there is no contemporaneous word in the Scandinavian language for town; the towns are merely referred to as settlements.⁸⁶ If there had been a royal initiative behind an import of the concept, the word for town as well as institutions supporting regal domination would have followed the idea. Instead there are indications that the towns formed a new economic niche, where the rules of life were allowed to develop through the active practice of those living there and participating in the trade, and without much control by an outside power.

During the first half of the 9th century, the settlement of Ribe was surrounded in the east by a ditch that was too shallow to have been part of a defence structure. Instead the ditch might be interpreted as an administrative border and a delimitation of the town from its hinterland, similar to the borders we find in medieval towns. The ditch in Ribe was probably a symbolic border marking the beginning of the town and the implementation of the special rules and regulations of the town. The occupation was clearly limited by this ditch, as no contemporaneous traces of settlement have been found outside it. Houses dating from earlier periods, however, suggest that the occupation was more widespread before the ditch was introduced,⁸⁷ and this may imply a conformation of the town structure to this boundary.

The notion of a visible marker to show the end of urban regulation is supported by evidence in written sources that the urban community in medieval times was detached from the rural in that it had a separate legislation. The town laws were called *Bjarkøyrett*, Birka law, in all the Scandinavian communities. The earliest known version of this legislation dates from the mid-13th century, but the name suggests that the development of separate legislation stems from the 8th-century town. The origin of this law in the 8th-century town administration has been seen as a first step towards more formalised state organisation.⁸⁸ This need for separate legislation can, however, also be seen in the light of the town's position as an autonomous community with its own rules and regulations, and

84 Rosberg 2009, 84.

85 E.g. Callmer 1994, 51f.

86 Cf. Price, this volume.

87 Feveile 2006a, 43–47.

88 Skre 2008a, 88.

its confirmed right to this position, something that is also physically manifested in the existence of a symbolic town ditch marking the borderline between town and hinterland.

The Swedish Forsa ring, dated to the 10th century AD, has a runic inscription interpreted as the oldest legal enactment in Scandinavia. This suggests that already in the 10th century a formalised rural jurisdiction was practised.⁸⁹ Consequently there seem to be two forms of legislation, separating the urban from the rural, already in use before AD 900. Moreover, the inscription implies legislation rooted in the traditions of Viking Age society, where the rights of the people were consolidated in the local individual initiative like the thing council, and not by formal legislation emanating from a royal power. This, then, differs from the structural basis of the later medieval laws.⁹⁰

Long-distance trade constitutes the economic foundation that paves the way for the special communities of the towns and the idea of a market with evolving economic systems. Coinage is usually seen as a manifestation of power and a stage in establishing royal authority. Local coin production can most likely be confirmed in Ribe and Hedeby in the early 9th century.⁹¹ However, the apparent unstable political situation of the time has been used as an argument against this, given that the general theory maintains that coins represent kings, especially in the earliest stage of coinage. Instead, the earliest Scandinavian coinage is recognised as dating from the late 10th century, when coins from, for example, Sigtuna fulfil all the criteria expected of such a propagandistic manifestation of power.⁹²

In Sigtuna the king managed to create a market where the nominal value of the coins was stable and not so strongly bound to their real silver value, testifying to a system where only the king's money was used on the market. However, a market created in an area with a tradition of real silver weight economy could not define the value of the money on nominal grounds alone. The Sigtuna coinage followed a definite weight system relating to the measurement system in the area where prices were defined according to weight. It implies a more integrated market, comprising the economic practices of both town and hinterland and thus balancing the two different economic systems of real and nominal value, where the silver surplus accumulated during the Viking Age could come under the control of the king through the market. This market mastered both economic systems and bridged together and united them in coinage.⁹³ These conditions differ from the 9th-century coinage of Ribe and Hedeby, where the monetary system was apparently in use only within the town and thus limited to the individual market.

It should be evident that coins can have different symbolic values in different contexts, and that the idea of symbolising royal power was not part of either Ribe's or Hedeby's coinage. The 9th-century coins were struck without a representative royal imprint; they are small and their silver value is low, and they differ in appearance quite distinctly from the coins of the late 10th century, with their clear allusion to the king.⁹⁴ The limited distribution of the sceattas can also be seen as an expression of a delimited monetary function, as a token of the nominal value in transaction within the border of the town, and thus as a mon-

89 Brink 1996, 35f., 50.

90 Herschend 2009a, 73, 76f.

91 Skre 2008c, 344; Feveile 2006d, 279; Gustin 2004, 14.

92 E.g. Malmer 1989, 11.

93 Herschend 1992, 19–21.

94 E.g. Tesch 1990, 14.

etary economy that had relevance only in the context of the town. Coins coined on the market for the purpose of transaction within the market area are not an unknown phenomenon.⁹⁵ The coins can thus be regarded not as an expression of authoritarian royal power, but as a means of payment of nominal value restricted to the market area, issued and controlled by the local authorities limited to the town but with linkage to a large-scale European trading network, and thereby as evidence of an autonomous cultural unit. The symbolic value of these coins, instead of relating to the king, lies in the fact that they point to an actual market place, such as Ribe and Hedeby, and to their concept of a market.

Between c. AD 840 and 950, Arabic dirhams were evidently imported to Scandinavia via Russia in large numbers.⁹⁶ With the large inflow of Islamic coins to Scandinavia, which started in the second half of the 9th century, silver became widely available in the Baltic Sea area. It seems significant that the striking of coins came to an end in Hedeby at virtually the same time as silver became a more accessible commodity. This might be explained as that the nominal value of the coins had given way to real silver value. When silver became more accessible as communications, market opportunities and business boomed, transaction became harder to control within regulated towns, probably because there was no royal power to control the economy of the realm. A power such as the one in Sigtuna a century later, which managed to control the economy and force through a monetary market economy despite accessible silver, was apparently absent at this point in time. Towns were therefore forced to adapt to the new economic situation, because neither they nor the economy was under the control of a royal power. From the position of linear history, a regression to a “less advanced” economic system thus has to be accepted.

As mentioned above, neither Crown nor Church was present in the architecture and layout of the towns. It is obvious that the towns in this respect differ from the traditional rural central places, as these have an apparent sacral central function in addition to their more profane purpose. Viking Age towns thus seem to lack two of the central functions found both in the preceding rural central places and in the succeeding medieval towns.

One argument to support the idea of the towns as autonomous communities is the presence of extensive burial grounds. This is a phenomenon unknown in connection to the seasonal market places, where the graves instead are located by the farms. The symbolic meaning of graves in the landscape can in this case scarcely be ignored. I argue that the town comprises the ideological entirety of a complete society, the place where one is born, lives and dies. The graves provide the community with history as well as presence in the land and anchorage to the same through the visible presence of previous generations. Despite the diverse burial practices, the location of the burial grounds (*Fig. 2*) represents a clear symbolic manifestation of presence and completion.⁹⁷

Birka, Kaupang and Hedeby are surrounded by several burial grounds.⁹⁸ The largest of the burial grounds outside the town wall of Birka, Hemlanden, contains 1600 burial mounds.⁹⁹ Birka's counterpart on the other side of the Baltic Sea, Staraya Ladoga, is also bordered by burial grounds containing barrows with

95 E.g. Polyani 1978, 95.

96 Noonan 1991, 202.

97 Cf. Herschend 2009, 117 ff.

98 Gräslund 1980; Stylegar 2007; Garipzanov 2008, 130.

99 Ambrosiani 1992, 19f.

inhumations as well as cremations, and among these are also boat graves.¹⁰⁰ The town of Gnēzdovo is likewise surrounded by extensive burial grounds with a large number of mounds.¹⁰¹ There are no visible burial grounds connected to the town of Ribe, but several graves have been excavated in the large borderline area to the east and north of the settlement. These are almost exclusively poorly equipped cremation graves, the majority dating to the 8th and 9th centuries. It is likely that these graves formed parts of one or several large burial grounds on the outskirts of the town.¹⁰² Hedeby follows the pattern of graves in the border area of the town. Even though these graves are not visible in the present landscape, they must have had a great impact on the contemporaneous apprehension of the towns. It is striking that each of these “prehistoric” landscapes introduces the approaching traveller to the town via the graves. Through their presence the graves make history and legitimacy manifest in the landscape, a pattern well known from the rural landscape of the time, where graves belonging to a village or farm are generally placed outside the enclosed fields and meadows, on the border of the outlying land where the pasture begins. Often there are several burial grounds around a village, normally exposed so as to be visible from neighbouring villages, or placed further out in connection with important roads. Graves have therefore been related to the emphasising of a border and are seen as physical manifestations of the land belonging to villages, interpreted as the “symbolic expression of ownership and the right of inheritance to the land ‘enclosed’”.¹⁰³ In the same way, the inhabitants of the towns are relating their lives to history and displaying the connection to, as well as permanence in, the land.

This is a very different spatial form compared to medieval towns, where the graves are placed inside the town, among the living. The symbolic position of a grave, in the liminal position between controlled land and hinterland, displayed in the layout of the Late Viking Age towns, as well as the manifestation of a historical connection to space, gave way to other values and new symbolic meanings in the Middle Ages. The principal difference between the 8th-century towns and their 10th-century successors is this relation to the graves, as well as the lack of a church and royal power in the first towns. These institutions could easily have been included had the town area been expanded. The reluctance to do so, and the willingness to instead create a whole new town where these powers were present in the town architecture already in the initial stages, indicates that the town should be considered not only as a physical or economic body but also as an ideological phenomenon.

Scandinavian Viking Age society is usually perceived as a society with a focus on the collective; family and kinship were decisive for a person’s social position, and gift-giving and tributes shaped an intricate system of loyalty and dependency, creating relational personhoods. The economic ground created by intensified trade in the 8th century gave people new opportunities to gain social and economic power on an individual basis separate from the traditional kinship systems, and enabled new social networks to be created. The Viking Age towns in Scandinavia and Rus were new communities created on the basis of new economic situations “in between traditions”. As such, they can be distinguished from a former norm. The towns were the meeting ground for several different

100 Androshchuk 2008, 521.

101 Pushkina 2004, 45, 48.

102 Feveile 2008, 128.

103 Fallgren 2008, 73.

cultural traditions interacting in a new social environment, where relaxed power structures created conditions for a special way of life. The towns can be seen as representatives of the breaking point between two different systems of power, taking advantage of a lack of authority. The towns are situated in a time between heathen and Christian cultural norms, and at some point were also chronologically in between the traditional Norse material culture and a European ideal. They also manage to bridge together the two different economic systems of medieval Europe and the Scandinavian Iron Age and create a common middle ground. The precondition for this is the extensive long-distance trade system that formed new economic structures and, in extension, new economic opportunities for people. This appears to be an accepted and even anticipated in-betweenness, supported and employed by the ambient society, as seen by the secluded geographical locations, indications of separate regulations, town borders and economic systems. The town occupies a definite space in between. Normative cultural traits, characteristic for this urban culture, can be traced within the spatial layout of the towns in relation to burial grounds, a conservative system of plot division and house types. When new norms were created in the interaction between members of the community, it is likely that a society was formed on new structures, with a new community and an individual sense of identity.¹⁰⁴

Christianity and royal power

It has been suggested that one of the reasons for the need to relocate the 8th-century towns in the 11th century was the religious change from a heathen to a Christian society that followed the 9th- and 10th-century mission.¹⁰⁵ This explanation appears to be a simplification, however, as some of the graves in Birka are more likely Christian, and Ribe and especially Hedeby probably were at least partly Christian societies.

The transition to Christianity is not the violent confrontation between heathen and Christian gods as described by missionaries¹⁰⁶ and imagined by earlier research. It is clear that the written sources in this case have had a paramount position in relation to the archaeological material. The idea of the religious change as a dramatic break has no empirical support, with the exception of some written accounts. It is evident that Christianisation was a long-term process.¹⁰⁷

Scandinavia should not be seen as an isolated, peripheral part of the world, introduced to new thoughts by incoming missionaries and adventurous Vikings. The Viking Age represents an era of more regulated and organised long-distance trade than before; but long distance contacts were far from being a new phenomenon in Scandinavian society, and long-distance trade networks were established long before the 8th century. Different cultures should never be imagined as isolated units: as far back as can be researched, people inhabiting Scandinavia have had long-distance contacts and exchange with people representing diverging societies. Scandinavians had therefore been introduced to Christian thoughts and ideologies centuries before the missionaries spread their word, as evidenced by

104 cf. Fowler 2004; Gosden 2004.

105 E.g. Skre 2008a, 86.

106 E.g. Rimbart 1926, 84.

107 Gräslund 2001, 128.

both imported and locally produced artefacts. Moreover, a number of Scandinavians were in all likelihood Christian.¹⁰⁸

Conversion to Christianity was at this stage not a question of individual belief and conviction, but very much a collective decision, as can be seen by the decision of kings to convert. Part of the institutionalisation of Christianity was thus a matter of replacing the communal heathen practices with Christian ones, as indicated by the fact that Christianity spread faster in areas under the firm control of a Christian ruler.¹⁰⁹ Anne-Sofie Gräslund suggests that the Scandinavian kings adopted Christianity as a strategic measure in order to be on equal footing with their European counterparts. She also implies that the conversion could have been used to abate the power of the old aristocracy.¹¹⁰ Christianity provided new opportunities to legitimise the king's power, as the power now emanated from God, and thus Christianity represented the one truth. "These universalizing notions appealed to rulers and their advisers because they recorded ideas of community, shaped new identities, identified new enemies, and supplied new justification for royal power."¹¹¹ I think that this aspect is a far more important one than religious conviction in the early stages of religious transition, and it is also in this light that the second wave of establishing towns should be seen. As Alexandra Sanmark has noted, given the substantial royal presence in the buildings and layout of Sigtuna, it is evident that the town was planned and built as a royal base of power rather than as a commercial centre.¹¹² This should be seen not only as a natural development of the town function but also as a conscious decision of its founder. The early medieval towns are representative of the period when royal sovereignty was established, and the towns served as a base for this regal domination.¹¹³ As noted above, during the first years of occupation in Sigtuna the features of crafts and trade were not so pronounced, which indicates that these functions were not the first priority in the initial stages of organising the new town.

Heathen as well as Christian practices are very much a communal matter in the Viking era. There are, however, elements in the material to suggest that Christianity in Birka might have had the character of more personal belief, as seen by individual graves with Christian attributes in communal burial grounds. There is even an example of a double grave of a man and a woman containing both a crucifix and a Thors's hammer pendant.¹¹⁴ It is reasonable to assume that in the stage of direct contact between the Christian missionaries and their followers, personal conviction played a greater role than in the formalised conversion initiated by the royal power. This might also imply a more individualistic community, independently organised in relation to society at large.

The presence of Christianity is not necessarily proof of continuity, as the Christianity following the missionary phase represents a new formalised Christianity in liaison with a formalising royal power. The official Christianisation of Scandinavia started with the kings accepting the new religion, in 960 in Denmark and towards the end of the 10th century in Norway and Sweden.¹¹⁵ This

108 Fabeck & Näsman 2009, 115–120.

109 Sanmark 2004, 84. 182–185.

110 Gräslund 2001, 129.

111 Smith 2007, 231.

112 Sanmark 2004, 78.

113 Andrén 1985, 120.

114 Gräslund 2001, 73.

115 Sanmark 2004, 22.

is, however, not so much an introduction of a new religion as an introduction of a new social order.

The collision between the Viking Age and the medieval town order should thus not be seen as a clash between religions or faiths but as one between ideologies. Despite its autonomous economy, the Viking Age town represented part of a traditional social order connected to old power structures, which the new consolidated power aimed to obviate. The medieval town had the task of representing something different, namely the king, the state and stability.

Concluding remarks

While the disappearance of the towns has required no explanation, the reasons for the emergence of the towns in the 8th century have followed two main arguments: the emergence has either been ascribed to a transnational trade system, with the towns founded on foreign initiative,¹¹⁶ or it has been seen as part of a local national development towards unified states, with the towns founded on the initiative of the king.¹¹⁷ It is evident that these perspectives exclude each other from the interpretations. The local small-scale perspective and the global structure of integrated trade, however, are perspectives that must be able to interact to create a convincing analysis of these societies. The early towns should be comprehensively explained as communities of unique contexts, created on the basis of new economic opportunities that arose in Scandinavia and Russia within an organised trade system. There should be room for a situational perspective, without generalising from the single urban context to comprise the entire Viking Age society; room should be given for conflicting tendencies within a tradition. Perhaps the towns can be seen as communities connected through a common economic system that reached across cultural and political boundaries, connected through a system of institutions and activities that followed some common rules and practices, a system that enhanced the similarities in the material culture of the towns.

Leaving preconceptions aside, and concentrating on the material, a common development in synoptic terms can be traced among the 8th-century towns. They seem to be initially founded as marketplaces, most likely at the initiative of a local society, and with their focus on extensive overseas trade. They formed settlements organised in a balance between the hinterland and a group of craftsmen and traders, and developed fairly quickly into separate communities creating their own norms. As meeting places developing their own social norms where people from different traditions could interact on common economic terms, the towns maintained links with the hinterland and society at large. As such, they created new opportunities for people to organise a social structure separate from the traditional power structures based on family, kin and land. Consequently, a new collective community developed and created an inclusive identity, where different cultural traits were accepted and incorporated, as long as newcomers accepted the rules and customs of the community. New norms were created through the practices of everyday life and formed new traditions specific for the community. An indication as to the autonomous character of the towns might

116 E.g. Feveile 2006a, 28–31.

117 E.g. Skre 2008a, 84.

also be found in the fact that, after half a century of town formation, no new towns were founded for centuries. This stagnation in the process of urbanisation might be explained by a social power struggle, where no force was strong enough to continue the process, thus indicating a transitive period between power structures.

The inhabitants of the towns occupied a new economic niche between traditions, and their town comprised a whole cognitive frame; the place where one was born, lived and died represented a way of life organised on its own premises. The towns did not form part of a unified power structure, but instead represented an open society where cultural boundaries were not sharp but inclusive. As such, the towns posed a potential threat to unified power as representatives of the identity of an old society, neither compatible with a new "national ideology" nor possible to convert in accordance with this. They challenged the homogenous history that a strong royal power needed to project, and had to be assimilated or destroyed. In this light, the discontinuation of the towns can be ascribed to an ideological change; however, the establishment of united Scandinavian states has to be postponed.

In the historical development of Viking Age society, these towns hold a fairly strong position and it is here that we should seek the explanation for their disappearance. The towns – with their connection to traditional Scandinavian society, with their autonomous position and the emerging, consolidating royal power – represent two different trajectories that cannot be combined. They represent a historical identity that needed to be forgotten on behalf of the creation of a new tradition. The identity of the townspeople had to be transcribed to conform to the homogenising narrative of a congregated realm. The synchronised disappearance of the 8th-century towns should thus not be regarded as a temporal coincidence in a continuous development, but as an effect of a new ideology with new demands on its urban centres.

The process of Scandinavian urbanisation has to a large extent been guided by preconceived ideas of progress and linear development, which contributed to the idea of continuity. To Enlightenment philosophers such as Voltaire and Adam Smith, the city was the civilising agent of society, the community that constituted the foundation for both culture and industry. This idea was inherited by Romantic philosophy, where the ideal town was seen as an original creation of the folk and the refinement of national civilisation, and representative of the break between the traditional and the modern, nature and culture.¹¹⁸ Similarly, within contemporary historical and archaeological thinking the towns have come to take the role of a symbolic beginning of civilisation. Towns are seen as the introduction to a more developed "modern" society, something that pervades the interpretations of the Viking Age towns: "Towns played an important role in the transformation of the Scandinavian tribal communities of the pre-Viking Age period to the three kingdoms of the late Viking Age."¹¹⁹

As a contrast I have suggested a discontinuous development, where the Viking Age towns evolved as comparatively autonomous societies with little ideological dependence on king or hinterland – an independence that became a liability towards the turn of the millennium when power structures in society changed. This autonomy was thus the decisive factor when the towns were abandoned and

¹¹⁸ Schorske 1998, 39f, 47, 53.

¹¹⁹ Skre 2008a, 84.

relocated by a new, nationalising, royal power. The history of the townspeople had to be rewritten to fit into the medieval society; they could no longer be allowed to work within a system of their own. Conceptually, the town needed to be reorganised to submit to the hierarchal order of one king and his realm. The process of urbanisation should thus not be viewed as an uncomplicated story of linear progression and succession, but as a complex development that allows room for discontinuity and divergence and thereby enables a fuller interpretation.

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22. Greening the Ancient City: The Agro-Urban Landscapes of the Pre-Hispanic Maya

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ABSTRACT

Urbanism is a global phenomenon with considerable time-depth. In most regions of the world, people have for more than a millennium organized their settlements in ways that in some sense can be recognized as distinctly urban. Different urban histories have given rise to a remarkable spatial diversity and temporal variation viewed at the global and long-term scales, though this is often overlooked in urban scholarship. Recent and ongoing archaeological research demonstrates that many pre-industrial urban settlements in several different regions can be characterized as “low-density cities”. In this chapter the author discusses some methodological and theoretical issues in the investigation of pre-industrial, low-density cities, focusing on the pre-Hispanic Maya lowlands of Mesoamerica. The author argues that land-use strategies that intimately inter-finger agricultural production with functions more commonly associated with urbanism can account for the relatively dispersed distributional pattern of architecture in Maya settlements. The present contribution intends to draw attention to pre-industrial, low-density cities as an important category of global urbanism and particularly to the phenomenon of urban farming as a pertinent feature in long-term human history. The data from the Maya lowlands indicate that agricultural production is not, as often implied, the antithesis of urbanism, but to the contrary often an urban function.

Introduction

Urbanism is a global phenomenon with considerable time-depth. In most regions of the world, people have for more than a millennium – and often for several millennia – organized their settlements in ways that in some sense can be recognized as distinctly *urban* (Australia being the only non-Arctic continental landmass lacking clear pre- or proto-historic urban formations). Different urban histories have given rise to a remarkable spatial diversity and temporal variation viewed at the global and long-term scales, though this is often overlooked in urban scholarship. Indeed, orthodox urban history tends to succumb to recentism (i.e., focus

on recent periods, commonly the industrial era)¹ and to favour a linear urban evolutionary scheme with an Eastern Mediterranean and Near Eastern centre of origin.²

Recent and ongoing archaeological analyses show that many pre-industrial urban settlements in several different regions can be characterized as “low-density cities.” A straightforward definition of this term is simply that settlement components are relatively spread out or dispersed in the landscape. Investigating low-density urbanism provides an empirical basis for approaching new and often overlooked research themes in urban archaeology, in particular urban land use. Distinct documented cases of early low-density cities include the settlements of the pre-Hispanic lowland Maya of southern Mesoamerica,³ the Zimbabwe culture of southern Africa,⁴ and the Khmer civilization of Southeast Asia,⁵ but the phenomenon of pre-industrial low-density cities is both inadequately recognized in mainstream urban scholarship and greatly under-investigated. Hence, further field mapping of urban residential sectors and cross-cultural comparative research are liable to add substantially to the list and to provide crucial detailed data for explaining the phenomenon.

In this chapter I discuss some methodological and theoretical issues in the investigation of pre-industrial low-density cities, focusing on the pre-Hispanic Maya lowlands of Mesoamerica. Since early low-density cities are poorly investigated in archaeological research, the detailed characteristics and diversity of these kinds of settlements are not very well understood at all. It is in a sense ironic that most archaeological research in the Maya lowlands continues to be carried out in urban contexts and yet we know relatively little about some broader aspects of urban settlement patterns and how they have come about. This is in part owing to an unfortunate but persistent bias towards investigating elite culture in Maya archaeology, the notorious and tenacious “temples, palaces and tombs syndrome” of archaeological research in many places around the world, not least in the tropics.⁶ Here I argue that land-use strategies that intimately inter-finger agricultural production with functions more commonly associated with urbanism can account for the relatively dispersed distributional pattern of architecture in Maya settlements. The present contribution intends to draw attention to pre-industrial, low-density cities as an important category of global urbanism and particularly to the phenomenon of urban farming as a pertinent feature in long-term human history. These perspectives may ultimately be relevant for contemporary society by informing current urban land-use planning, providing an example of an applied use of archaeological knowledge production.

The pre-Hispanic Maya lowlands

Archaeologists use the term Mesoamerica to refer to the large region that stretches from present-day northern Mexico southwards to Central America, as far south as the Honduran/Nicaraguan border region (*Fig. 1*). In pre-Hispanic times – over

1 Smith 2009a, 14; Sluyter 2010.

2 See e.g. Southall 1998.

3 Isendahl 2002.

4 Sinclair *et al.* 1993.

5 Fletcher 2009.

6 Cf. Connah 2001.



Figure 1. Map of Mesoamerica showing the borders of modern countries, pre-Hispanic cultures and urban settlements mentioned in the text.

millennia prior to the Conquest period which began in the early 16th century – numerous different complex societies developed in Mesoamerica. Although these societies are distinct, they also are to some extent similar in regards to material culture, subsistence, ideology, cosmology and religion. The Olmecs, the Zapotecs, the Mixtecs, the Toltecs, the Aztecs and the Maya are some of the best known pre-Hispanic Mesoamerican cultures. They were engaged in intensive agricultural production, craft production, public construction, long-distance trade networks, had hierarchically organized socio-political structures and built large and complex urban settlements. Among all these pre-Hispanic urban cultures Teotihuacán of the mid-first millennium AD in the Central Highlands of Mexico was the largest city, being comparable in size, density and complexity to its Old World contemporaries like Constantinople.

Pre-Hispanic Maya civilization extended over tropical and subtropical Mesoamerica, leaving an extraordinarily rich archaeological heritage in the area that comprises southeast Mexico, Guatemala, Belize and parts of Honduras and El Salvador. Archaeologists usually divide this area into three main culture areas based on geographical and, to some degree, culture-historical differences: the Pacific coast, the highlands and the lowlands (*Fig. 2*). The Maya lowlands, the area under study here, covers about 250000 km² and includes Belize in its entirety, Guatemala's Petén District, and the Mexican states of Campeche, Yucatán and Quintana Roo. The lowlands consist of a flat to slightly rolling limestone plain, generally at an elevation lower than 200 m above sea level. The principal exception is the Maya Mountain range in the border region between Guatemala and Belize that reaches an altitude of about 1000 m above sea level. The soil parent material consists of Tertiary and Quaternary limestone, and variations in land use, hydrology, climate and inclination have acted to produce a diverse soilscape. Lowland soils are often very fertile, in some areas exceptionally productive, and climate is the principal limiting factor for agricultural production, particularly in the northern lowlands.

Current precipitation levels vary considerably throughout the Maya lowlands, with the highest rainfall (>2000 mm/year) in the southern lowlands and the driest conditions (<800 mm/year) along the coastal plain of the northwest Yucatán Peninsula.⁷ The climate of the lowlands is seasonally dry, with very low precipitation outside the rainy season that lasts from May to October. During the rainy season, two common anomalies in the rainfall pattern potentially cause distress

⁷ Isendahl 2002, 53–60.

Figure 2. The Maya Zone with places mentioned in the text.



to local farmers. One is the midsummer dry spell, which in some years starts in June and lasts for about two months at worst. Since farmers in the region plant maize, beans, squash and many other crops as soon as the rainy season starts, a severe and prolonged dry spell may jeopardize harvests. Another potential obstacle is the hurricane season that runs from August to October. Hurricanes and tropical storms strike the Yucatán Peninsula on average one per year. The heavy rains and strong winds accompanying the hurricanes are known to have devastated harvests on a very broad scale, and certainly did so too in the pre-Hispanic past.⁸ The fractured structure of the limestone bedrock drains surface water to the aquifer and there are few permanent bodies of water, rivers or streams in many areas, which makes rain-fed agriculture even more vulnerable to erratic rainfall. In many regions of the lowlands, and particularly in the north where precipitation is lower and the rainy season shorter, people managed seasonal water scarcity by using a number of different techniques to collect and store rainwater. Rainfall and the acquisition of fresh water were of great concern to pre-Hispanic lowland Maya farmers, which is clearly attested in the aquatic symbolism of lowland Maya art and architecture.⁹

Maya lowland vegetation largely co-varies with the spatial patterning of climatic conditions, and the rainforests of the Petén District and Belize gradually give way to a sequence of evergreen seasonal, semi-evergreen, deciduous and scrub forests as annual precipitation averages decrease towards the north and northwest.¹⁰ Across the lowlands, forests at various stages of succession and maturity are interspersed with cultivated areas and cattle pastures. Current agri-

⁸ Dunning & Houston, in press.

⁹ E.g. Davis-Salazar 2003; Scarborough 2003; Lucero 2006; Lucero & Fash 2006; Isendahl, in press.

¹⁰ Wilson 1980, 25–32.

culture includes both farming dependent on fossil fuels and traditional swidden cultivation (known as *milpa* farming). Owing to the longevity of pre-Hispanic lowland agriculture extending over at least three millennia before the arrival of the Spaniards in the early 16th century, and a farming population that at the time of their greatest numbers in the late first millennium AD probably outnumbered current population levels, there have not been any pristine forests in the Maya lowlands for more than a millennium.¹¹ From the perspective of historical ecology,¹² people have been an integral part of Maya lowland landscape formation for a very long period of time indeed, to the extent that the one is unimaginable without the other. In this heterogeneous environment – which is much more complex and diverse than the popular, simplistic view of the ancient Maya as a “rainforest civilization” suggests – farmers grew their crops, lived off the land, and transformed the landscape for millennia prior to the initial development of complex large-scale settlement in the first millennium BC.

The dispersed settlement pattern in pre-Hispanic lowland Maya urban history

By the early to mid-first millennium BC a number of interrelated factors – including intensified agriculture, surplus production, population growth, craft production, capital accumulation and the emergence of elites – contributed to the growth of incipient forms of urbanism in the Maya lowlands. Nakbé, located in the tropical rainforests of Guatemala’s Petén District, is the best known from this early phase of Maya lowland urbanisation. The Middle Preclassic (c. 1000–400 BC) occupation includes the construction of a large civic-ceremonial core, consisting of several building complexes of monumental platforms that support plazas, temples, palaces and other public buildings, and that cover some 20 hectares.¹³ The building complexes are connected by causeways (known as *sacbeob* pl., *sacbe* sing., -*ob* being the Maya plural suffix) and the civic-ceremonial core complex forms an elongated and segmented shape of linked nodes of different building complexes rather than a solid nucleus of clustering monumental architecture. The civic-ceremonial core complexes of Maya urban settlements were the loci for central religious, administrative and political activities and the residential areas of polity elites. Archaeological surveys at Nakbé demonstrate that the settlement extends beyond the core, with household groups dispersed over the landscape in an area of at least 80 hectares. In the Early Preclassic period (c. 400 BC – AD 250), the urban settlement at nearby El Mirador, connected to Nakbé via a 13-km-long inter-core causeway, displayed one of the most monumental civic-ceremonial cores ever constructed in the Maya lowlands.¹⁴ Archaeological mapping of the large area surrounding the core is still fragmentary, but the work that has been done indicates the same dispersed distribution of household groups as at Nakbé.

Much later, in the Late Classic period (AD 600–800), Tikal – not more than 50 km from Nakbé – grew to become one of the largest urban settlements of the

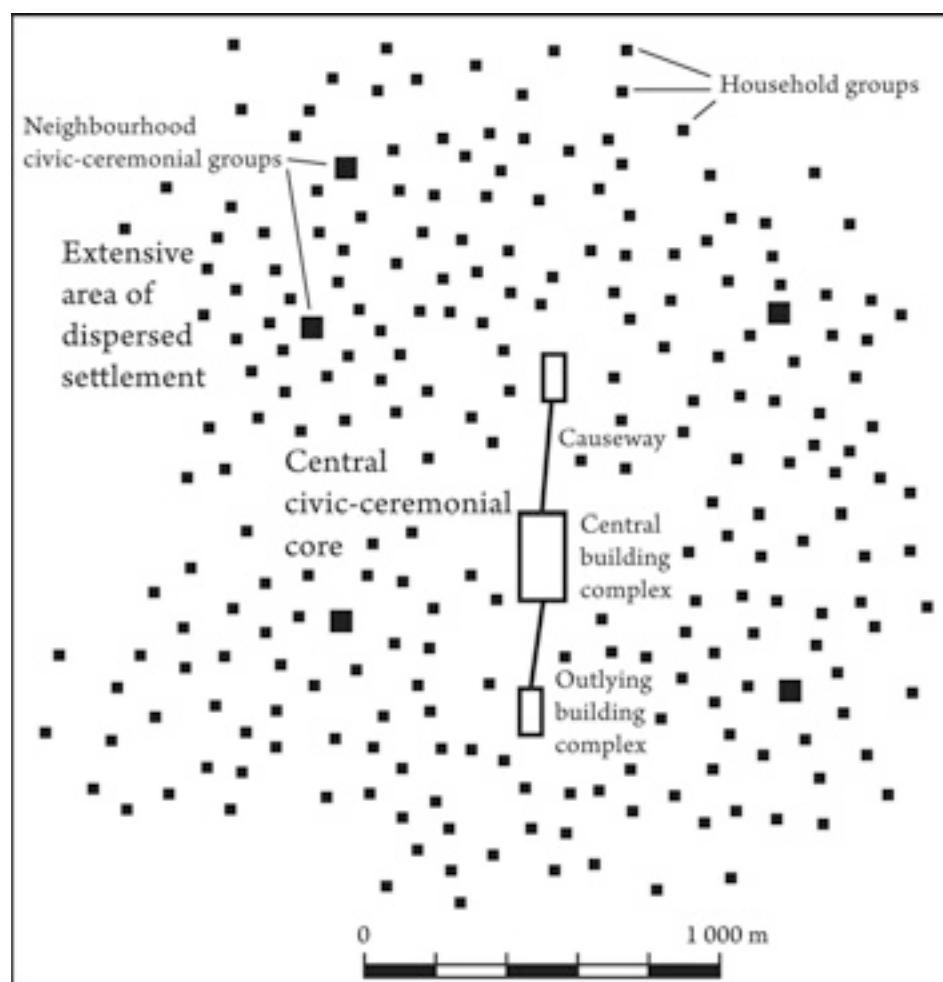
11 Ford & Nigh 2009.

12 Balée 2006.

13 Sharer & Traxler 2006, 211–214.

14 Hansen 2001.

Figure 3. The basic model of Maya urban settlements: a central civic-ceremonial core of building complexes is linked together by causeways, surrounded by dispersedly distributed household groups.



region.¹⁵ The civic-ceremonial core covers some 200 hectares, and estimates suggest that the zone of dispersed settlement at Tikal extends over anything from 60 to 120 km². Although Tikal's heyday of construction and population is several hundred years later than Nakbé and El Mirador, the very basic settlement pattern is the same: a central civic-ceremonial core of building complexes linked together by causeways and surrounded by dispersed household groups (Fig. 3).

The residential household group is the basic building block of pre-Hispanic Maya settlement, whether large or small, early or late. Similar to the low-density and central civic-ceremonial core network pattern of Maya urban settlement, the architectural household group model is remarkably stable over time. The archetypal household group consists of a quadrangular basal platform constructed from limestone rocks, boulders and debris, which elevates the living surface from ground level (Fig. 4). A house was built at each side of the platform, and an underground water cistern, a *chultun*, was built into the platform and the ground underneath, typically with the mouth of the cistern located in the centre of the platform. Such a group of buildings was probably inhabited by an extended family, a household of perhaps some 5–10 members. With some chronological, geographical and socio-economical variations, most non-monumental architectural groups follow this general model in outline.

Nakbé, El Mirador and Tikal are clearly conspicuous cases in Maya urban prehistory. Are they suitable cases for characterising the pre-Hispanic lowland Maya urban settlement patterns as a whole? Mapping data from a number of

¹⁵ Sharer & Traxler 2006, 302–319.

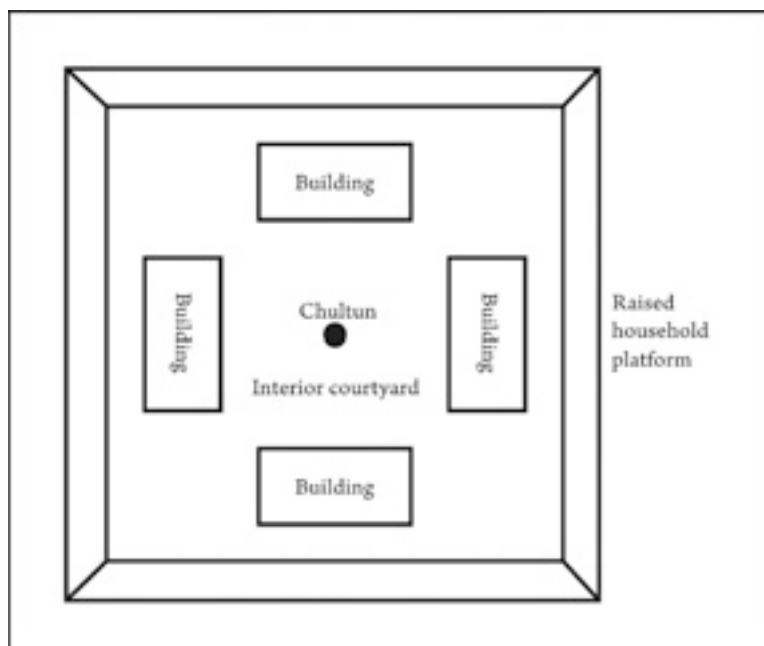


Figure 4. The settlement model of a Maya household group.

other localities around the lowlands suggest that they are indeed suitable. There are a few exceptions of urban settlements that do not fit this pattern – notably Mayapán in the Late Postclassic period (c. AD 1250–1450) – but hundreds of settlements throughout the region persistently seem to comply with a dispersed, low-density pattern. Despite long-term cycles of urban settlement growth, decline and reorganization, as well as significant regional variation, this broad way of organizing the landscape is reproduced in most geographical regions, from the humid tropical environments of the Petén to the scrub forests of the semi-arid northwest peninsular region.

Urbanism and long-term social change in the Puuc

In the Puuc sub-region of the northwest Yucatán Peninsula, large-scale urbanisation began in earnest relatively late, towards the end of the Late Classic period (c. AD 600–800). But once the process began, numerous urban settlements were established and grew rapidly. Over about two centuries, regional populations multiplied to make the Terminal Classic Puuc (c. AD 800–1000) one of the most densely populated regions of the entire pre-Hispanic Maya lowlands. The Puuc covers approximately 3000 km² and forms a diverse geophysical region that includes areas with some of the most fertile soils of the northern Yucatán Peninsula. Indeed, Dunning¹⁶ suggests that the Puuc was a bread basket for the larger northern peninsular region. But the Puuc is also a region where access to fresh water does not come easily. The climate is seasonally dry with erratic seasonal rainfall, the average annual precipitation of 1100 mm being relatively moderate to low, there are no permanent natural water bodies or streams and the aquifer is at too great a depth to access. Water management – to successfully catch, store and distribute rainwater – was of paramount importance for sustaining a livelihood in the Puuc, for households and communities alike.

¹⁶ Dunning 1992.

Plate 1. Façade masques of the Classic Maya rain deity Chahk at Uxmal. Photo by the author.



Intense Puuc urban culture was sustained – at least for a time. In the early Terminal Classic, Puuc urban centres flourished. An elaborate and distinct elite residential and civic-ceremonial Puuc architectural style developed that is particularly renowned for façade decorations that include masque representations of the rain deity Chahk (*Plate 1*), evidently the most prominent character in the Puuc Maya pantheon. A range of Puuc urban settlements were established and they grew rapidly. Sayil, Uxmal and Xkipché are some of the best known, but due to fragmentary field surveying the complete list of Terminal Classic Puuc urban settlements should be regarded as not yet established. While regional survey has provided detailed data on several monumental civic-ceremonial core complexes,¹⁷ only a few Puuc sites have been investigated at a scale large enough to shed light on the character of urban communities as a whole. One of the better known Puuc settlements is Sayil, where mapping demonstrates the same dispersed, low-density pattern.¹⁸ The settlement extends over the entire 3.5 km²

17 E.g. Pollock 1980; Dunning 1992; Williams-Beck 1998.

18 E.g. Sabloff & Tourtellot 1991; Smyth & Dore 1992; Smyth *et al.* 1995.

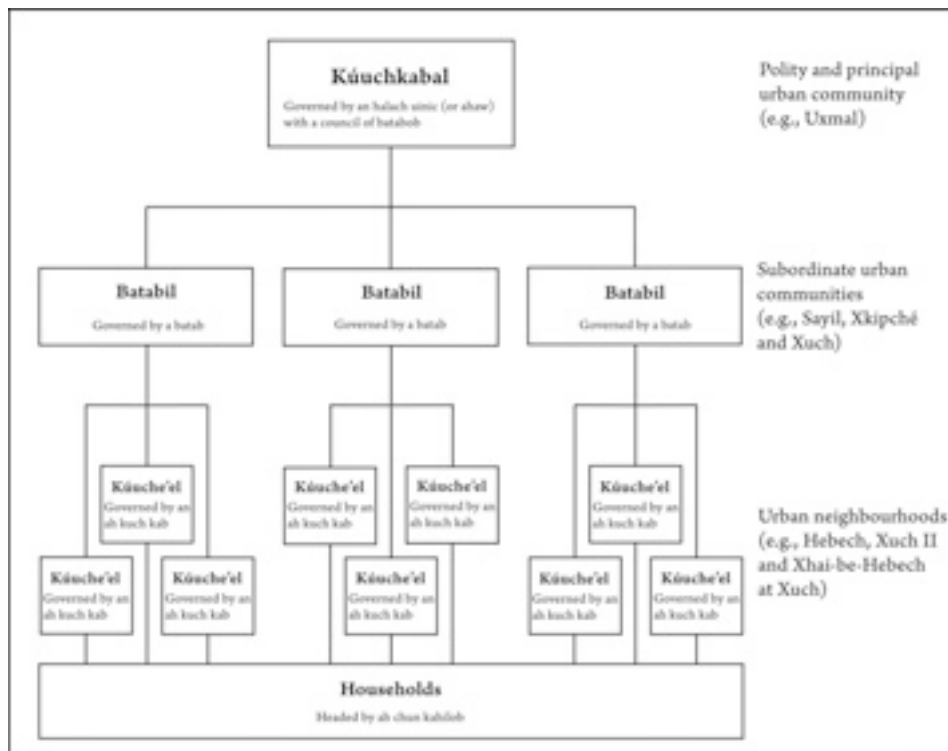


Figure 5. Schematic model of Puuc political organization based on ethnohistorical data.

mapped area. The central civic-ceremonial core complex at Sayil consists of four major nodes of buildings connected by a series of north to south trending causeways, in total stretching about 1200 m. Sectors with dispersed household groups surround the civic-ceremonial core in all directions, interspersed with spaces lacking any surface indicators of house constructions.

Classic Maya polities were organized to a large extent as dynamic city-states that expanded and contracted over time, sometimes forming alliances among them, conquering one another or colonizing new areas.¹⁹ Local and regional Classic and Postclassic Puuc settlement patterns seem to corroborate well with models of political organization reconstructed from ethnohistorical documents.²⁰ There are three levels in this hierarchical political structure that correspond to discrete units in the settlement record (Fig. 5). At the highest level is the *kúuchkabal*, the overarching polity and principal settlement governed by a hereditary lord, the *halach uinic* or *ahaw*, and a council of *batabob* (-ob is the plural suffix in Yukatek Maya). Ringle and Bey²¹ suggest that Uxmal, which is the largest of the Terminal Classic Puuc sites (at least in terms of its central civic-ceremonial core complex; the surrounding areas have not been adequately researched), represents a Puuc *kúuchkabal*. At the next level is a series of subordinate urban communities, *batabilob*, each ruled by a *batab* who paid tribute to the *halach uinic*. The *batab* was the chief executive, judicial and military officer of each urban community and ruled over the local community council. Quezada²² suggests that the *kúuchkabal* was a modular construction of smaller territorial units largely maintained through lineage affiliations of *batabob*. Okoshi Harada²³ further emphasizes that

19 Grube 2000; Pyburn 1997; Webster 1997; cf., Fox *et al.* 1996; Iannone 2002.

20 Roys 1957; Okoshi Harada 1992; Quezada 1993; McAnany 1995; Williams-Beck 1998; Prem & Dunning 2004; Dunning 2008.

21 Ringle & Bey 2001.

22 Quezada 1993.

23 Okoshi Harada 1992.

the atomistic polity changed continuously as alliances between and within lineages were renegotiated. The *batabil*, in turn, was divided into several *kúuchte'elob*, or lineage-based neighbourhoods. Each neighbourhood had its own administration, elite and lower-class population, and was governed by an *ah kuch kab*, or lineage head. McAnany²⁴ suggests that land tenure was controlled by lineages and that the *ah kuch kab* played a key role in supervising agrarian and commodity production within the *kúuchte'el*, organizing agrarian labour and distributing land and resource rights to household heads, the *ah chun kabilob*, as well as coordinating and controlling tribute to the *batab*.

Towards the end of the Terminal Classic period and at the start of the Early Postclassic (c. AD 1000–1250), most Puuc settlements were essentially abandoned, a process that seems to have been as sudden as regional population growth had been rapid a few centuries earlier. The processes behind the relatively rapid growth, short heyday and subsequent demise of Classic Puuc polities is a matter of debate that takes into account a series of factors, including climatic anomalies, decreasing soil productivity, fluctuations in interregional exchange networks, increasing political competition and social conflict. Tainter's recent efforts to explain patterns of large-scale social change based on models of transitions in energy gain over time²⁵ offer new leads for sketching Puuc settlement history. The critical concept in this scheme is energy gain, or energy returned on energy invested.²⁶ In any early complex agricultural society, the basis of economic and political power is the ability to accumulate capital or resources, which can also be thought of as different forms of energy (defined as anything that can be fully converted to heat), including emergy (the energy that has been used to produce something) and exergy (the potential energy capable of doing work).²⁷ Although the details of Maya political economies – which here can be understood as the social processes by which energy was accumulated among certain social groups in society at the expense of other groups²⁸ – are a matter of recent exploration,²⁹ the economic foundation of elite culture was based on controlling past solar energy transformed into agricultural produce and people's labour.

Rapid settling of the Puuc in the Late Classic period, by which the region gradually came under large-scale cultivation, corresponds to the high-gain phase of Tainter's model. In a competitive agricultural economy, taking control over a readily available and previously under-exploited resource such as highly fertile soils yielded a high return and financed the establishment of central institutions. Regional settlement data – including evidence of conspicuous consumption in the “Monstrous Visual Symbols”³⁰ of Maya elite residential, civic and ceremonial monumental architecture – suggest that this phase was characterized by political integration and economic maximization rather than resilient resource exploitation strategies.³¹ High-gain phases are usually relatively short in duration owing to that the key resource (available fertile soils in the case of the Puuc) is abundant,

24 McAnany 1995.

25 Allen *et al.* 2003; Tainter 1988; Tainter *et al.* 2003; Joseph A. Tainter, pers. comm. 2009.

26 Hall *et al.* 1992.

27 Odum 1996.

28 Cf. Hornborg 2001, 68–71.

29 E.g. Masson & Freidel 2002.

30 Fletcher 1977; Rathje 2002.

31 See McAdams 1978; Alexander 2005.

concentrated, inefficiently managed and rapidly depleted.³² Peaking energy gain seems to have occurred in the Puuc sometime during the Terminal Classic (c. AD 800–1000), and a transition from high-gain to low-gain energy returns occurred as regional populations rose, available farmland per capita diminished, cropping intensified, and surplus production decreased at the household level. In the low-gain phase, the key resource is usually scarce, dispersed, produces little surplus per capita and requires efficient management. In this view, regional settlement abandonment, which started some time in the latter half of the Terminal Classic, indicates that Puuc *kúuchkbalob* and *batabilob* were not resilient to transitions in energy gain. They seem to have been unable to make the organizational shifts required to manage a transition from a high- to a low-gain mode. With decreasing revenues followed economic instability, social unrest, political disintegration and regional depopulation. The relatively rapid development of events in the Puuc suggests that the political economy to some extent was a boom-and-bust economic venture aimed at exploiting the good farmland of the region.

Explaining Puuc Maya low-density settlement: a case study at Xuch

There are three main theories to explain the dispersed settlement pattern of pre-Hispanic Maya settlements: the *centrifugal*, the *invisible* and the *urban farming* hypotheses. The hypothesis of a *centrifugal tendency* in Maya populations rests on the basic assumption that people will not cluster unless provided with incentives or forced to do so by powerful elites. In this view the dispersed low-density settlement pattern follows from weak mechanisms of sociopolitical control and authority enforcement.³³ Although this is quite a widespread interpretation among Mayanists, others question its credibility on account of the “Monstrous Visual Symbols” of power and control displayed in monumental architecture, testament to the ability of the political elite to effectively extort tribute energy from commoners.³⁴ Indeed, in Classic Maya communities, political order permeated the perception of landscape, cosmology, the calendar, the built environment, land-use rights, identity, history and memory that would be difficult to sustain with weak mechanisms of authority enforcement. So, what alternative explanations are there?

Emerging from a taphonomic consideration of settlement data, the *invisible hypothesis* addresses the issue of dispersed settlement from another perspective and is based on the assumption that surface evidence of architecture forms a non-representative sample of construction and therefore provides only a fragmentary view of urban residential settlement. In some regions subsurface investigations have unearthed evidence of settlement in sectors with only minor surface indicators of residency, suggesting that several urban settlements may have been more clustered and dense than surface evidence alone will be able to demonstrate. The hypothesis suggests that in neglecting subsurface data, conclusions on urban morphology draw on unrepresentative surface settlement samples that fail to grasp the full range of variation in Maya residential architecture and consequent-

32 Allen *et al.* 2003; Tainter *et al.* 2003; Joseph A. Tainter, pers. comm. 2009.

33 See e.g. Inomata 2006.

34 Chase *et al.* 1990; Isendahl 2006a; see also Smith 2003 on landscape transformation as an instrument of political coercion.

ly will be misleading. The invisible hypothesis has principally been put forward in the central and southern lowlands, where bio-geophysical conditions are different from the Puuc and architectural remains are potentially buried under deep soils.³⁵ In the northern lowlands soils are often shallow and house remains that would have been invisible further south are regularly documented.³⁶ However, since there usually are large pockets of deep soils in the Puuc, the invisible hypothesis may also be relevant for this region.

Emphasizing a functional explanation of the dispersed settlement patterns, the *urban farming hypothesis* argues that settlement dispersion and vacant urban spaces were conditioned by the location of agricultural field plots in close proximity both to household groups and to the civic-ceremonial centres of urban communities. This interpretation proposes that residential gardens, orchards, infields and outfields formed integrated components of an inter-fingered, multi-dimensional landscape, which to a considerable extent dissolved the conceptual distinction between urban and rural land use patterns into an agro-urban configuration. The urban farming hypothesis has found several proponents among Mayanists working in the northern lowlands.³⁷

In recognition of the complexity of the urban human experience, these hypotheses must not necessarily be taken as entirely mutually exclusive; each might have some bearing on the character of a particular urban settlement, and their accuracy probably varies from one urban community settlement to the other. However, since our interpretations of the general character of settlement patterns will have repercussions on our understanding of a number of other aspects of lowland Maya pre-Hispanic culture – population numbers and densities, subsistence economies, social organization and structure, political systems and hierarchies, human impacts on prehistoric environments and perceptions of the landscape, to name only a few – it is no exaggeration to suggest that this lacuna is a most urgent and underappreciated problem.

Xuch is a large pre-Hispanic Maya urban settlement 40 km to the northeast of Sayil in the Puuc, and was registered as an archaeological site in the late 1970s.³⁸ It is located in an area of very gently folded, bedded limestone at an elevation between 30 and 50 m, and the rolling topography is interspersed with relatively low-lying areas showing little difference in micro-relief which produces a local mosaic of low hills, valleys and flatlands. The local environment is highly diverse with nine different soils and five distinct vegetation types in the research area, artefacts of variations in topography, drainage and past and present land use. The soilscape is dominated by Leptosol soil catenas (relatively shallow soils usually with a high content of coarse fragments) and large tracts of deep, fertile Nitisols. The vegetation is a mosaic of medium forests, permanently cultivated fields in the flatlands, swidden fields (*milpa* plots) usually located in hilly and somewhat sloping terrain with shallow soils and open cattle pastures. Initial fieldwork indicated a substantial settlement dating to the Classic and Postclassic periods.³⁹ With the general aim of gaining a more complete view of the archaeological remains at Xuch, the author initiated an archaeological field research project that

35 E.g. Chase 1990; Pyburn 1990; Johnson 1994.

36 Dunning 1989.

37 E.g. Drennan 1988; Dunning 1992; Killion 1992; Sabloff & Tourtellot 1992; McAnany 1995; Smyth *et al.* 1995.

38 Garza Tarazona de Gonzalez & Kurjack Basco 1980, 103.

39 Williams-Beck & Okoshi Harada 1998.

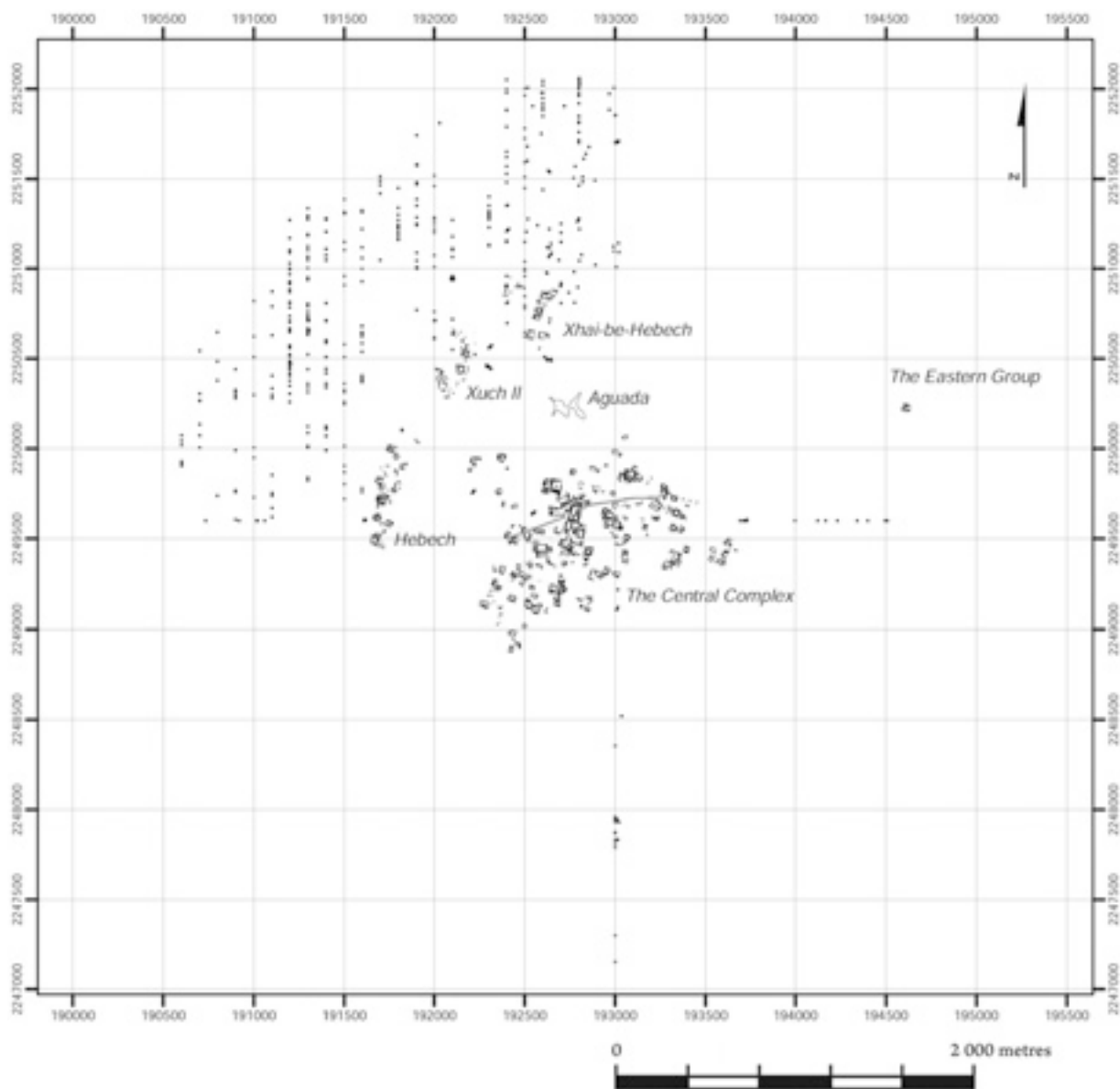
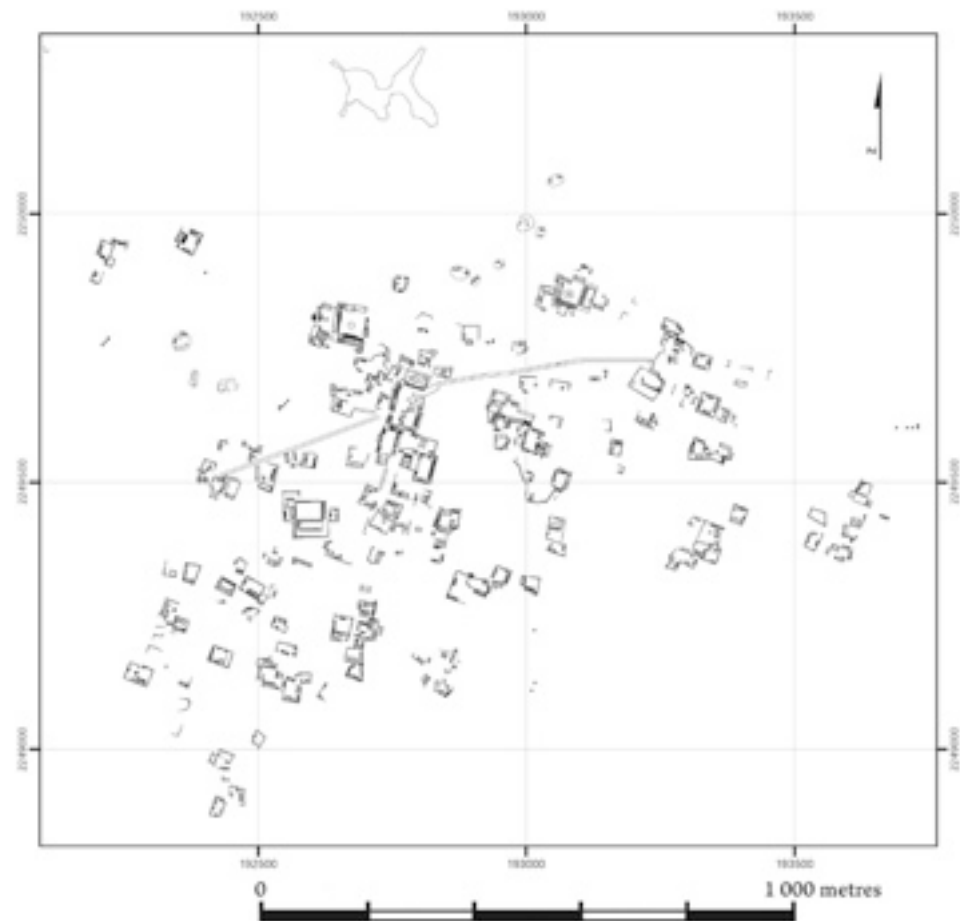


Figure 6. The architecture at Xuch.

extended over two seasons beginning in 1998. The research area was defined as the space within a radius of 2.5 km from the base point, bringing the total area under investigation to some 2000 hectares. A landscape-scale approach to urban settlement research was designed, which in the first season focused on architectural mapping and on collecting ceramics for dating purposes. In the following year, fieldwork was set to systematically survey an area of 5 km² in order to document additional architecture, to take soil samples for geochemical analyses (soil phosphate, carbonate and pH), to map vegetation and soil types, and to document the relative occurrence of surface ceramics and burned clay. The survey followed parallel transects spaced a hundred metres apart, with test and sample points at every hundred metres, resulting in a mapping resolution of a hectare.

The results show that the Xuch settlement patterns and chronology are similar to other Puuc settlements, for instance at Sayil. Ceramic evidence indicates that the urban settlement dates from the Late Classic to Early Postclassic (c. AD 700–1100), with a strong emphasis on occupation in the Terminal Classic peri-

Figure 7. The central civic-ceremonial core and surrounding residential zones at Xuch.



od.⁴⁰ With its civic-ceremonial core only some 15 km to the west of Uxmal, Xuch probably formed a *batabil* dependent on the *kúuchkabal* at Uxmal. Evidence for occupation in the preceding and succeeding periods is next to negligible, and the date of large-scale urban occupation is very well defined, indicating rapid urban settlement growth, a short pinnacle and a sharp decline.

The general distributional pattern of architecture at Xuch is consistent with the dispersed settlement model (Fig. 6) and suggests that the settlement – far more usefully thought of as an archaeological landscape than a site – may have extended over as much as 20 km², despite the civic-ceremonial core being only mid-sized in comparison to other regional contemporaries. At the centre is a pre-Hispanic water reservoir (an *aguada*), appearing as a settlement hub. The central civic-ceremonial core at Xuch is located about 500 m south of the *aguada* (Fig. 7) and consists of several monumental building complexes clustering within 35 hectares on a series of low hills and at the fringes of zones of deep and fertile soils. The civic-ceremonial architectural groups include a host of buildings associated with central administrative, political and religious ceremonial and elite residential functions, including pyramids, altars, palaces, ceremonial causeways and so on. The elongated system of causeways stretches east-west, connecting several of the most prominent monumental complexes, and is very similar to the civic-ceremonial core at Sayil. The eastern and western main sections of the causeway, totalling some 900 m in length, link two ceremonial architectural groups with pyramidal temples that are located at each extreme. The central node in the causeway network is known by local farmers as Calotmul, meaning

40 Isendahl 2002, 2006b.

two ruins. Calotmul is the most spectacular part of the archaeological landscape and composed of a large filled platform approximately 200 by 75 m constructed on a natural hill. Calotmul supports several patio and plaza groups with altars and monumental buildings, including two pyramids measuring about 20 by 22 m at the base and towering nearly 10 m above the inner platform surface. There are several other groups of monumental buildings with elite residential, civic or ceremonial functions in the vicinity of Calotmul. For instance, to the west of Calotmul the so-called Masque Complex includes a building with an elaborate 40-metre-long, Puuc-style, Chahk masque façade facing an enclosed patio with a circular platform and cubic altar stone.

There are two palace complexes at Xuch, which indicate that the *batabil* may have been governed by two competing or cooperating *batabob*. The Northern Palace Group extends over a hectare at the margin of the flatlands northwest of Calotmul. The palace is a one-storey building, 39 by 21 m at the base and 6 m high, with 11 discernible rooms with partly standing walls and vaulted roofs in the rubble. The patio group includes an altar construction with conical altar stones in the centre of the patio, and two buildings with wide, bench-like stairways, 42.5 and 30 m long, respectively, facing these. The Southern Palace Group is similarly located at the fringes of the large zone of fertile soils, to the southwest of Calotmul. It is a one-storey building, 50.5 by 21 m in size and 6 m high, and with at least 17 vaulted rooms, many of which are partly intact. This palace group lacks the clear indicators of ceremonial activities and public gatherings of the northern palace.

In addition to the central civic-ceremonial core complex there are other, lesser, secondary ceremonial building complexes. Notably, less elaborate subsidiary civic-ceremonial complexes are spread out in the landscape at Hebech, Xhai-be-Hebech and Xuch II, surrounded by dispersed household groups and forming *kúuchte'elob* neighbourhoods of the Xuch *batabil* (Fig. 6). The main architectural groups in these *kúuchte'elob* probably combined ceremonial space with the residence of the *ah kuch kab*, that is, the lineage head governing the neighbourhood.

The role of vacant urban space – the spaces in-between surface architecture – is the key to the low-density settlement pattern. The investigations at Xuch show that there are essentially two kinds of vacant urban space. First-order vacant urban space extends over several hectares and is represented, for instance, by the flatlands between the Central Complex and Hebech. Second-order vacant urban spaces are those within clusters of architectural groups; they can be as small as a few hundred square metres and are usually no larger than a hectare.

Was vacant urban space devoid of settlement? Did pre-Hispanic populations refrain from building in these areas, or is the apparent lack of finds an effect of the decay of buildings constructed from perishable materials, subsequent soil accumulation and/or recent destructive farming practices? The data available from Xuch make it possible to test the hypothesis that these spaces were essentially settlement areas from which no architectural surface remains exist. We may begin by examining the distribution of surface artefacts, a simple method that has proved useful in inferring information about the subsurface. Assuming that residential groups produced a number of artefacts that has remained more or less horizontally stationary, the occurrence of concentrations of ceramics and burned clay on the surface may be used as an indicator. Mapping results show, however, that the surface distribution and the low frequencies of these artefacts do not support the hypothesis. A few zones of abundantly occurring ceramics and

burned clay indicate the presence of some invisible settlement groups, but these appear restricted and cannot account for the former function in their entirety.

Analyses of soil chemicals, soil phosphates in particular, have frequently been used as an important tool for interpreting the functional use of household-related space in Mesoamerican archaeology, and can also be used as an indicator of the location of subsurface residential units in the landscape.⁴¹ Elevated values of soil phosphates are associated with activities linked to the residential compound, including waste disposal, cooking and construction, and can be used as a proxy for settlement in areas lacking surface indicators. In the Xuch data the general agreement between high soil phosphate values and clusters of surface architecture stands out clearly. The largest zone of consistently high phosphate values is found at the Central Complex, and the *kúuchte'elob* Xhai-be-Hebech and Xuch II are similarly associated with exceptionally high values while Hebech shows somewhat lower values. In general, the boundary between the elevated and the low soil phosphate values overlap with the limits of settlement, demonstrating that high contents in zones lacking architecture can function very well as an indicator of invisible settlement in vacant urban spaces. However, there are few such instances. In conclusion, the geochemical data do not support the hypothesis that first-order vacant urban spaces were essentially settlement areas from which no architectural surface remains exist, concurring with the conclusions drawn from the distribution of surface artefacts.

Several factors support the hypothesis that vacant urban space of the first order at Xuch was used for intensive infield cultivation at the time of maximum population. For instance, the soils of these spaces are deep, generally fertile, and rank among the best for cultivation in the northern lowlands. Secondly, the *aguada* in the midst of the vacant community space could have been utilized as a fresh water source for pot irrigation. Thirdly, as we have seen, they were not built-up settlement sectors. Low soil phosphate values suggest that fertilizers were not used in the cultivation of these lands, which might have been intensively cultivated with annual cropping. The current geochemical status can hide significant diachronic variation, however, and infields might have been fertilized in an early stage, subsequently to suffer depletion.

Focusing now on vacant urban space of the second order, these spaces form part of the concentrations of soil phosphates in the *kúuchte'elob*. At the current scale of sampling it is not possible to verify variations associated with small-scale activity zones such as discard and house-lot zones, or to discriminate between different sources of elevated contents, be they disposal of materials associated with residential units, evidence from surface features, invisible settlement groups or near-residential gardens. But following the conclusions drawn from the use of first-order vacant urban space, I suggest that second-order vacant space was essentially non-built and used for near-residential gardening. Data on contemporary gardens demonstrate that the spaces between residential units could house both garden plots and auxiliary activities related to the compound and *kúuchte'el*. This interpretation is supported by the lack of isolated finds of basins and *chultunob*, both of which are features strongly associated with Maya residences, and the lack of geochemical data at a finer resolution from other sites in the Maya lowlands.⁴² High levels of soil phosphates and carbonates indicate that the production po-

41 E.g. Wells *et al.* 2000.

42 E.g. Dunning 1992.

tential of the generally thin and rocky soils was improved by applying organic and limestone fertilizers. Pockets of relatively deep soils interspersed between residences, rock outcrops and sloping topography provided particularly suitable micro-zones for settlement gardens.

In conclusion, the investigations at Xuch indicate that vacant spaces in pre-Hispanic Puuc urban settlements formed part of an urban subsistence strategy that placed heavy emphasis on settlement agriculture. Vacant urban spaces of the first order were large areas within the *batabil* in which essentially no building constructions were erected. These were probably used for infield cultivation of staple crops at an increasing degree of intensification as the local and regional population increased and as surplus demands grew. Vacant urban spaces of the second order are mainly found in soils of relatively shallow depth, with generally high phosphate contents. It is suggested here that these spaces were essentially devoted to settlement gardening. Managed by household heads, the *ah chun kahilob*, garden plots were probably carefully tended and continuously fertilized to counteract soil nutrient depletion and secure yields, and they may have been exempted from surplus production demands as they were the domains of the households and the *ah chun kahilob*.

At the Terminal Classic pinnacle of occupation at Xuch, the bulk of agricultural produce consumed by the inhabitants might have been produced within the settlement. The fundamental role of the field and the garden in the urban model indicates that Xuch and other pre-Hispanic lowland Maya settlements were “green” cities.⁴³

Maya low-density settlements and early urbanism: some considerations

Given the dispersed pattern of these settlements and that agriculture formed a significant activity (both points contradict many popularly held views on the core characteristics of urban forms and functions), how can pre-Hispanic Maya settlements be considered as distinctly “urban”? Viewed as global phenomena with considerable time-depth, there is a fundamental dilemma in balancing inclusive criteria that may capture the full diversity of urban social formations through time and across space (e.g., pre-industrial and industrial cities, early urban societies in the tropics and in the temperate zones, New World and Old World urbanism, etc) with exclusive principles that guard against diluting the rigour of “urbanism” and “urbanity” as meaningful descriptive concepts.

Difficulties in defining and characterizing early urbanism remain a central issue in the archaeology of complex societies. Childe noted that “the concept of ‘city’ is notoriously hard to define”,⁴⁴ and Wheatley agreed that “‘urbanism’ is one of the most protean of terms”,⁴⁵ and despite the massive amount of archaeological data that has accumulated on a global scale over the last several decades, to describe “urbanity” as a universal term – as a robust category relevant for all periods and regions – remains problematic.⁴⁶ Indeed, to Childe – who consid-

43 E.g. Dunning 1992; Smyth *et al.* 1995; Isendahl 2002.

44 Childe 1950, 3.

45 Wheatley 1972, 601.

46 See e.g. Smith 2009a.

ered intensified irrigation agriculture an essential precondition for New World urbanism and who also believed (as was the common view of his day) that the Maya had only practised extensive slash-and-burn cultivation – “the minimum definition of a city, the greatest factor common to the Old World and the New will be substantially reduced and impoverished by the inclusion of the Maya”.⁴⁷ Childe nevertheless regarded the Maya as urban on account of the scale of public works being comparable in magnitude to those in early Mesopotamia and Egypt.⁴⁸ Although we now know that the pre-Hispanic Maya practised complex agrosystems that included different kinds of extensive and intensive cultivation strategies, the challenge has in many ways become greater as research results have demonstrated a still unfathomed diversity of human settlement in the long term. Indeed, is it at all justifiable to assume that the wide gamut of urban expressions detailed in the data be accommodated within a single defining paradigm?

A good case to elucidate the inclusive/exclusive dilemma and the problem of applying universally valid definitions is the recent identification of pre-Hispanic urban polities in the Upper Xingu area of the southern Amazon.⁴⁹ There is a long-standing debate on the nature of long-term social change in the Amazon Basin. Meggers⁵⁰ argues consistently that the poor and unpredictable environment of the rainforest cannot form the basis for sustained agricultural surplus production, hence limiting the growth of pre-Hispanic complex societies in the region. Over the last two or three decades, however, the majority of scholars engaged in the region have argued against environmental determinism and showed that complex societies did indeed develop, citing evidence of intensive forms of agriculture, large sedentary settlements, significant anthropogenic modifications of the landscape, long-term human impacts on species diversity, craft production, interregional trade in prestige goods and chiefdom-level societies.⁵¹

Heckenberger and colleagues⁵² present compelling evidence of a complex regional system of settlements dating from c. AD 1200 to 1600 in the Upper Xingu region of Brazil. Some of the settlements are ditched, have central ceremonial plazas and are interconnected with raised roads, and are clearly the remains of a pre-Hispanic Amazonian complex society. In an exchange with Meggers,⁵³ Heckenberger and colleagues explain: “To be perfectly clear, we do not propose that there were lost cities and civilizations in the Amazon, because this assumes that we know what one might look like in the region, when it is precisely this that we must find out. [...] As in many non-Western settings, however, we find that social complexity here does not necessarily fit preconceived notions, about urbanism, for example.”⁵⁴ In a subsequent paper, however, they claim that: “These societies were organized in articulated clusters, representing small independent polities, within a regional peer polity. These patterns constitute a ‘galactic’ form of prehis-

47 Childe 1950, 9.

48 Childe 1950, 11.

49 Heckenberger *et al.* 2008.

50 E.g. Meggers 1954, 1996, 2001.

51 E.g. Balée 1998; Balée & Erickson 2006; Denevan 1992; Glaser & Woods 2004; Heckenberger 2005; Heckenberger *et al.* 2003a, 2007, 2008; Heckenberger & Neves 2009; Lathrap 1970; Lehmann *et al.* 2003; McEwan *et al.* 2003; Roosevelt 1980; Stahl 2002; Woods *et al.* 2008.

52 Heckenberger *et al.* 2003a.

53 Meggers 2003.

54 Heckenberger *et al.* 2003b, 2069.

toric urbanism, sharing features with small-scale urban polities in other areas.”⁵⁵ Although additional field evidence is discussed in this later article, the basis for the new interpretation is not supplementary data. Instead, Heckenberger and colleagues are re-conceptualizing their earlier findings. Now emphasizing the variability of urbanism as a global phenomenon, they employ a definition of early urbanism “that is not limited to cities, meaning megacenters (5000 or more persons) distinctive in form and function from rural or suburban communities, but that also includes multicentric networked settlement patterns, including smaller centers or towns”.⁵⁶ The point here is not to assess whether or not these settlements were urban,⁵⁷ but to show how the inclusive/exclusive dilemma frames a process of continuous re-conceptualization in a dialectic relationship with the data. Similar to the reality they serve to represent, resilient concepts must be dynamic.

Many common-sense definitions use a demographic distinction: urban settlements have a large and dense population relative to their surroundings. Ever since Childe’s comparative approach to discussing “the urban revolution” in human prehistory,⁵⁸ there have been countless attempts at finding a meaningful definition of urbanism as a long-term global phenomenon. Some have been more inclusive, exploring and relying on comparative observations of datasets from different time periods and regions. Others are decidedly more exclusive, centric and effectively idiosyncratic.

There are, broadly speaking, two main approaches to defining urbanism.⁵⁹ The first looks at demographic and formal criteria, in particular population size, nucleation and social complexity. There are also a host of different definitions focusing on functional criteria, in particular different aspects of central place functions: for instance political, ceremonial, administrative, religious, and economic mercantile central functions that dominate a region. Both approaches are used in Mesoamerican and Mayan scholarship. Orthodox application of formal demographic definitions potentially risk excluding many Maya settlements from consideration as urban on account of too weak clustering of population. To Smith the dispersed settlements of the Maya are “clearly cities in a functional sense, even if they appear not to be cities in a demographic sense.”⁶⁰ Functional definitions will tend to result in smaller and less populated settlements being classified as urban.⁶¹ Functional definitions should not be seen as a way to bypass or dilute the significance of the urbanism concept, but to approach a better understanding of a multifaceted and diverse social phenomenon in human history that need not be based on idiosyncratic cases of, for instance, recent mega-cities.

Childe drew heavily on Maya archaeology, despite the lack of urban settlement data and that it was not his field of expertise. Curiously, his understanding of the Maya as fully urbanised can be seen as counter-current to the mainstream view among contemporary Mayanists and is at one level more akin to current interpretations, but it rested on the idea of monumental architecture as *the* fundamental criterion of urban form. Furthermore, most of Childe’s other criteria

55 Heckenberger *et al.* 2008, 1214.

56 Heckenberger *et al.* 2008, 1214.

57 But see Smith 2009b, 2009c for a critical view.

58 Childe 1950.

59 Cf., Marcus 1983, 196.

60 Smith 2002, 5.

61 Smith 1989, 455.

– surplus production, non-productive social classes, a ruling class, capital accumulation, long-distance trade, administration and writing, calendrical and mathematical sciences and sophisticated artistic expression⁶² – might not be as distinct for *urban* societies as for complex societies in general.⁶³

Fox's comparative approach to historical urban anthropology⁶⁴ provides an important term, "the regal-ritual city", which takes stock of what many Mesoamericanists regard as the main functions and *raison d'être* of early urbanism in the region.⁶⁵ Fox's regal-ritual urban model focuses on the central place function of cities as loci for elite residence and centralizing religious-political ceremonies, based on the control of ideology and ritual as a mechanism of power: "What makes the regal-ritual urban type distinctive is that its existence depends almost entirely on ideological functions."⁶⁶ Political ritual as a centralizing force seems to have been a key tool in pre-Hispanic Maya politics,⁶⁷ which is mirrored in the centrifugal hypothesis to explain dispersed settlement. Regal-ritual functions clearly correspond well to activities associated with the central civic-ceremonial building complexes of Maya settlements; but elevated to a defining criterion of the urban type, the regal-ritual category cements one-dimensional foci on elite manifestations as the most important expressions of urbanism.

The degree of settlement planning is often used as a marker of early urbanism.⁶⁸ In this discourse planning is usually synonymous with *central* planning of the civic-ceremonial sectors of the settlements and is contrasted to the organic growth associated with lower-tier residential zones. Smith expresses this view well: "[in most Mesoamerican cities and towns] the central plazas were carefully planned and laid out according to religious and political principles, whereas the surrounding residential zones were unplanned and lacked an overall organizing theme."⁶⁹ Ashmore uses a more inclusive definition of planning: "the deliberate, self-conscious aspect of settlement patterning, at scales from individual structures through regional landscapes".⁷⁰ If pre-Hispanic Maya urban settlements were indeed divided into *k'üuchte'elob*, or lineage-based neighbourhoods that had their own administrations, then it is also possible that urban layout planning to some extent was decentralised and multi-scalar. One challenging aspect of investigating planning principles in pre-Hispanic urban layouts is that they are very difficult to infer unless there is some kind of immediately recognizable geometrical pattern. Layout plans in urban archaeology are most often associated with orthogonal shapes of architecture, and interpretations of residential settlement sectors that are not laid out in gridded patterns as "a haphazard arrangement of house lots"⁷¹ remain standard. However, the idea that planning ends where the rectilinear shapes do is problematic. Instead, following Smith's approach to understand planning as based on degrees and kinds of standardisation and coordination of space,⁷² the persistent repetition of the dispersed low-density

62 Childe 1950, 9–16.

63 Cf. Haviland 1966, 42.

64 Fox 1977.

65 E.g. Marcus 1983; Sanders & Webster 1988.

66 Fox 1977, 41.

67 E.g. Inomata 2006.

68 E.g. Marcus 1983; Smith 2007.

69 Smith 2002, 16.

70 Ashmore 1989, 272.

71 Bray 1972, 915.

72 Smith 2007.

settlement pattern, repeated throughout the region for millennia, suggests an intentional convention to urban form that might best be thought of as planned organic growth.

The regal-ritual urban model is informed by the influential idea of the “consumer city,” derived from Weber’s *The Agrarian Sociology of Ancient Civilization*.⁷³ Sanders and Webster argue, for instance, that the urban nucleus of Copán in the Classic period constituted a place of consumption rather than production.⁷⁴ But the view of Maya cities as non-productive places of consumption does not make any sense if we include the entire agro-urban landscape in the urban formation. Outside the civic-ceremonial complexes, which were undoubtedly centres of conspicuous consumption, most community members were engaged in production on a daily basis, in workshops as craft specialists but above all as settlement farmers.⁷⁵

Weber would probably have found urban farming production an oxymoron. He would not be alone in this; on a colloquial level the urban and the agrarian are often perceived as conceptual counterparts: “urban” is largely synonymous to “non-agrarian.” There are ethnohistorically known examples of Mesoamerican cultures that make no distinction between town and supporting hinterland.⁷⁶ In these cases there is simply no evidence for distinct categories that separate townspeople from anyone else or suggest any acknowledged difference in kinds of urban versus agrarian lived experiences. This certainly does not mean, of course, that people were not categorized or did not have social identities – only that the “urbanite” might not have been the most relevant one. Furthermore, most pre-industrial city dwellers anywhere were farmers,⁷⁷ and they probably spent most of their days cultivating their fields, wherever these were located. In this perspective it becomes quite tenacious to speak of separate urban and rural experiences, urban versus rural minds. Indeed, as Cowgill has pointed out,⁷⁸ even in the clustered orthogonally planned mega-cities of the past, no one lived farther away from the outskirts of the urban zone than a fifteen-minute brisk walk, not even the members of the elite who resided next to the enormous monumental precincts of the Pyramids of the Sun and the Moon in mid-first millennium AD Teotihuacán. Add an hour and you would have been in another world. Or would it indeed be part of the same world?

Cognitive anthropology teaches us that categorizing one’s surroundings and the objects of the world in which one lives is a universal phenomenon. All people do it; it is not a feature unique to the Enlightenment onwards in the Western world. Furthermore, we cannot predict categories based on one system of knowledge from those of another. In other words, we cannot assume that people in urban societies of the past considered urban life in any way qualitatively distinct from leading the life of a farmer, as we tend to do today. The notion of urban essences, of qualitatively distinct urban livelihoods, gained legitimacy within the Chicago school of urban sociology about a century ago – a brainchild of early modernist scholarship.

73 Weber 1998 [1908]; see also Parkins 1997.

74 Sanders & Webster 1988, 534.

75 E.g. Chase *et al.* 1990, 501.

76 Marcus 1983, 206–208.

77 E.g. Sanders & Webster 1988; Smith 2001, 2002.

78 Cowgill 2004.

The most basic problem of any urban community is food provisioning. Despite the conceptual separation between the urban and the agrarian, masking that farming and urban life go hand in hand, strategies of food production and distribution are the keys to any urban system. Usually, as Smith points out,⁷⁹ it is difficult to identify the specific mechanisms of provisioning. Where did the food come from? For Sanders and Webster food for urban consumption was produced in the hinterland, and the size of a regal-ritual city was basically determined by the production potential of the hinterlands that it dominated,⁸⁰ which is the conventional view. But in the agro-urban landscape of the pre-Hispanic Maya, the relationship is somewhat different: food consumed in the city was also largely produced in the city. Since it minimizes transport energy costs, the agro-urban landscape is an efficient way of producing food – particularly in the absence of draught animals – and it might have been a contributing factor in shaping the low-density settlement pattern. In fact, the data from the Maya lowlands indicate quite decisively that agricultural production is not the antithesis of urbanism, but to the contrary – and no less provocatively – an urban function.

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23. Southeast Asian Urban Minds: An Example From Laos

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ABSTRACT

This chapter discusses the challenges of defining the Urban Mind in a Southeast Asian context, with specific focus on Vientiane, the capital of Laos. Today, Vientiane is among the smallest of the Asian capitals with a population of approximately 500000 people. From an archaeological perspective, Vientiane has been an urban site for more than a thousand years, and it was one of the main urban centres in mainland Southeast Asia 500 years ago when it served as the capital of the great Lan Xang kingdom. With its double character – global in a historical perspective and local in a contemporary perspective – Vientiane is here used to illustrate the structure and complexity of Southeast Asian urban sites and the connection between spatial/temporal organisation and urbanism.

In this chapter urbanism refers to the social, material and symbolic role of urban centres, and includes form and function as well as ideas and values represented in spatial arrangements. There are multiple forms of urbanism and urban minds that are shaped by historical, geographical and economic circumstances and that are not always reducible to Western models of urban development. Therefore, the chapter is introduced with a discussion about the global and the local. Traditional arguments, such as that urbanism is a result of globalisation and modernisation and thus decreases Asianness and threatens the cultural heritage of Asian cities, are posed against arguments such as that urbanism rather leads to a cultural localism where the local cultural identity is protected as an essential component of sustainable urban development. As the global and the local often occur side by side, as is illustrated in the second part where Vientiane is introduced, the cosmopolitan perspective is used in this chapter as a theoretical frame. Cosmopolitanism has an overarching framework of global politics but also very specific concerns about the individual and the community.

The main part of the chapter, then, is a presentation and analysis of the concept of urbanism in a Lao perspective and of the *mandala* and *meuang* structures, which are essential for urbanism in Southeast Asia in general and in Vientiane in particular. The chapter also discusses how the urban mind was, and is, influenced by outside forces as well as a culturally and socially constructed perception of what it means to be urban – the *mandala/meuang* structure – and how this forms the basis not only for a physical but also for a whole symbolic and imaginary landscape that has shaped the political and social order in Southeast Asia during the last 2000 years. A basic characteristic of this *mandala/meuang* structure is its continuous ability to change. There are different levels of urban and non-urban in Vientiane, and the borders between the inside and the outside of the urban fluctuate and change. Following the cosmopolitan approach, this chapter shows the overlaps of global and local, of centre and periphery, of material and symbolic, of inside and outside, and that the balance between these overlaps, or forces, is ultimately what urbanism is about.

Introduction

It is a challenge to define the *urban mind*. As a concept it is global and has a world-wide scope, but at the same time it harbours a number of notions and must be seen in relation to the different and specific contexts – spatial as well as temporal – with which it deals. In this chapter, Southeast Asia is the specific context. By bringing up examples from Laos and its capital Vientiane, I will illustrate how spatial and temporal organisation connects with urbanism and how this can be related not only to Southeast Asia in general but also to the global scene. The aim is not to suggest a general definition of the concept that can be collectively used, but rather to exemplify that there are multiple forms of urbanism and urban minds – shaped by historical, geographical and economic circumstances – that are not reducible to Western models. Southeast Asian urban sites cannot be studied on the basis of established knowledge about processes of urbanisation in general. People are different and there is much to learn from our differences. Therefore, it is necessary to show different and varying aspects of urbanism, and its oppositions and problems, since they also have implications for the study of urban processes throughout the world today.

When writing about urbanism here, I follow Askew, Logan and Long and refer to the social and material as well as symbolic role of urban centres.¹ It embraces both the *ideas and values* represented in spatial arrangements (such as architecture and physical structures) and the *functions* of the sites as they communicate with the surrounding periphery and with the wider social system. Urbanism encompasses the character of urban form and function, but it is also an idea ‘whose very definition, significance and meaning varies across cultures and history’.²

Globalisation – localisation

Some common assumptions about cities throughout the world are that they are essentially homogenous in both form and definition, that they are based on Western models, and that they are a result of globalisation. It is also assumed that economic globalisation – i.e. the reduction and removal of barriers between national borders in order to facilitate the flow of goods, capital, services and labour – inevitably leads to cultural globalisation and that this is connected to the emergence of the urban explosion in Asia which started with the economic boom in the 1960s and is still proceeding rapidly. I would argue together with others³ that the belief that economic globalisation and external (read: Western) forces of globalisation are the only reasons behind the growth of Asian urbanism, must be challenged. The picture is far more complex than that, and this view is now widely accepted.

Some scholars argue that Asian cities are becoming more and more like Western cities, and that urbanism is connected to and only explained as a result of globalisation (preferably economic) and modernisation (or ‘Westernisation’). Here, there is a sharp divide between the urban and the rural. This explanation follows a linear and evolutionist perspective where the urban is often seen as more developed than the rural. Others rely on the idea that this economic globalisation

1 Askew *et al.* 2007, 4–5.

2 Askew *et al.* 2007, 4–5; Wheatley 1972, 601–635.

3 Cf. Bishop *et al.* 2003; Logan 2002.

also leads to cultural globalisation and, in the specific case of Southeast Asia, to a loss of 'Asianness'. Thus, according to the latter argument the distinctiveness of 'Asian' cities is tied up with tradition, and modernisation is therefore 'un-Asian'. In this view, globalisation presents a major threat to the maintenance of the cultural heritage of Asian cities.⁴ Others argue that economic globalisation leads to cultural *localism* with increased local resistance to cultural globalisation, resulting in an even stronger protection of the local cultural identity as an essential component of sustainable urban development. In other words, globalisation and localisation occur side by side, and the balance between these forces is ultimately what urbanism is about.

However, using only the notions of local and global to describe the traditional versus the capitalist is bound to fail when we take in all the complexities that become obvious 'on the ground' when we work as archaeologists, observing both spatial and temporal aspects of urbanism. Therefore, I have been inspired by current *cosmopolitan approaches within archaeology*, which challenge the impositions of Western heritage discourse by 'destabilizing the presumed cultural "goods" of world heritage, global patrimony, and other universalisms'.⁵

Cosmopolitanism

Regardless of whether urbanism is a result of, or results in, globalisation and localisation, and whether the study of urbanism involves individual and specific perspectives and/or collective and universal perspectives, it forces us archaeologists who deal with past as well as present urban heritage to consider this new set of multi-scalar engagements. Whereas speaking in terms of globalisation presupposes 'an overarching homogeneity of the planet in economic, political, and cultural spheres, the term *cosmopolitanism* might be employed as a counter to globalisation from below'.⁶ Globalisation is seen as something happening out there, whereas cosmopolitanism happens from within. Cosmopolitanism, which has an overarching framework of global politics but also very specific concerns about the individual and the community, 'is not a circle created by culture diffused from a centre, but instead [...] centres are everywhere and circumferences nowhere. This ultimately suggests that we already are and have always been cosmopolitan, though we may not always have known it'.⁷ With its interdisciplinary approach and spatiotemporal practice, archaeology works with both multi-scalar and contextual perspectives and is thus in itself cosmopolitan.

What, then, does a city like Vientiane add to the discussion about urbanism and urban minds? Well, from a cosmopolitan perspective archaeology should be practised in contextually specific ways because broad interpretations are shaped from or by the local, and the global must be understood from within the framework of diverse communities. Describing and exploring a rather small urban place like Vientiane could therefore get the concepts of urbanism and urban mind to harbour the number of notions that are not always in complete harmony with the basic ones focusing on globalisation or localisation or both. Let me therefore start by describing the object of study, Vientiane, and then continue by analysing

4 Logan 2002, xii.

5 Meskell 2009, 5.

6 Meskell 2009, 25.

7 Pollock *et al.* 2002, 12 in Meskell 2009, 5.

different aspects of spatial and temporal organisation that can hopefully tell us something about the urban mind, both in Southeast Asia and elsewhere.

Vientiane

Vientiane is a wonderful place. Still, I was slightly disappointed the first time I went there. I had expected a busy, crowded city that matched my, albeit naïve, ideas of a typical Asian capital. Instead, what I found when I first landed at Wattay Airport in Vientiane in 1995 was anything but a bustling place. I rode a few kilometres into the city centre in the back of a car on a bumpy dirt road. The driver kept the same speed as the motorbikes and the tuk-tuk three-wheeler cabs, which were the most common vehicles on the road. Everything seemed to move at a slow pace, and although there were lots of people standing along the road waiting, or selling and buying things, I got the feeling of a provincial and somewhat marginalised place. With its low buildings and dirt roads, my first impression of Vientiane was of a small town rather than a Southeast Asian capital.

The stage and its setting

Vientiane is a city, a prefecture, and a province. The immediate city area, demarcated by the remains of the outer and most recent city wall, is made up of approximately one hundred villages, dispersed over three different districts (Fig. 1). Together with six other districts, they constitute Vientiane Prefecture, which was separated from the surrounding Vientiane Province in 1989. Vientiane Province comprises twelve districts and is one of 16 provinces in the country. Vientiane Province and Prefecture are situated in the mid-western part of Laos, with the Mekong River as the southern and western border. Here, and for almost the whole of western Laos, the Mekong is also the border to Thailand (Fig. 1).

In a wider perspective, the plain of Vientiane lies in the northern part of the Khorat Plateau, which primarily embraces northeastern Thailand but also covers parts of central Laos. It is named after one of the largest cities in the area, Nakhon Ratchasima, the shortened form of which is Khorat and which is situated in the southwestern corner of the plateau. The Phetchabun Mountains mark the border of the plateau, with central Thailand to the west, the Dangrek Mountains to Cambodia in the south, and the Annamite Mountains to eastern Laos and Vietnam to the east. The plateau is tilted towards the southeast and drained by the Mun and Chi Rivers, which are tributaries of the Mekong and flow from west to east across the plateau, and by the Mekong River itself. Large parts of the Khorat Plateau are now clear-cut dry forest. Towards the east and northeast, that is, the Vientiane area, the vegetation is a mix of moist deciduous and semi-evergreen forest. Northeastern Thailand, which is part of the Khorat Plateau, is called Isan and was included in the Lao kingdom of Lan Xang from the mid-fourteenth until the eighteenth century. Most people speak Isan, which is more similar to Lao than to Thai, and their customs and traditions are also more similar to those of the Lao. When it comes to climate, vegetation and topography, the area around Vientiane has also more similarities with the Isan than with the mountainous areas to the north.

Although the northern and eastern parts of Vientiane Province are mountainous, the topography around the city is flat and the Mekong and its tributaries



Fig. 1. Map of mainland Southeast Asia with places mentioned in the text. Map by the author.

dominate the landscape. Owing to the monsoon climate, the water level of the rivers varies significantly, with flooding during the rainy season (May–October) and steep riverbanks during the dry seasons. In the immediate surroundings of the city, most vegetation is secondary forest such as bamboo, bananas and other fruit trees. Interspersed between the built-up parts of the city, in the outskirts of and around the city, are paddy fields for cultivating rice. In the last decade a great many of them have been developed into irrigated paddy field systems for multiple harvest rice. This period has also seen a building expansion in the city, which to some extent has resulted in the filling in of green areas.

Most people inhabiting the province and prefecture of Vientiane are Lao, according to the officially defined ethnic groups, but there are also numerous other groups. The population density decreases moving from the city centre towards and beyond the outskirts. In the mountainous areas around the city are scattered villages, and the eastern part of the province is the least populated area in the whole country.

Historically, the first Southeast Asian urban centres developed along, or most often on, both sides of the rivers. This is a pattern of which we can still see the remains, for example in Vientiane. When the first city wall was built around Vientiane in the thirteenth century, it also included an area on the other side of the Mekong in what today is Thailand (see *Plate 1*). The explanation is that the rivers were the main routes through which communication could flow. Similarly,

Plate. 1. Aerial photo from 1954 of Vientiane with city walls marked. Photo courtesy of the Ministry of Information and Culture, Vientiane.



the rivers were the main trade routes, where physical and mental exchange could take place.

Vientiane – the global and the local

Laos, a predominantly agrarian country with a generally poor infrastructure, is often described as remote, backward, peaceful and laidback, as is Vientiane (Plate 1). After experiencing a problematic history with colonisation, political fragmentation and wars, the twentieth century has indeed been a period of socio-political marginalisation for Vientiane (and for the entire country), even though it is geographically central in mainland Southeast Asia. However, we should bear in mind that the characterisation of Vientiane as a marginal place is fairly new, and that this marginality, both in relation to Southeast Asia and to the world, is not a fixed characteristic. 'It depends to a considerable extent on where you stand; in Vientiane's case it also depends on *when* you were standing there'.⁸

Ever since 1999, when Laos was promoted by ASEAN as the tourist country of the year, this marginalisation has been used as an asset in promotions to attract tourists. Today, Vientiane fascinates people with its natural beauty and unrivalled peace and serenity, which have become a marketing label for the city. Concurrently, and therefore perhaps slightly ironically, modern urban developments in

⁸ Askew *et al.* 2007, 4.



Plate 2. The Thanon Fa Ngum street in Vientiane 1909/1995/2006.

the last decade have dramatically increased and rapidly changed Vientiane. Now there is a feeling of vibrant activity, of entrepreneurship and infrastructural developments. The question whether Vientiane is ready to emerge from the shadow of its influential neighbours has now been raised.⁹ Martin Stuart-Fox has written about his own experiences of Vientiane in a foreword to the only book in English so far published that focuses on this city.¹⁰ Stuart-Fox is an international scholar with long experience of Laos and Vientiane. I quote him here, in his personal account of how the last decades have shaped what is now contemporary Vientiane:

I first arrived in Vientiane in 1963 [...] One became aware of the different layers of the city imposed one upon the other, like immiscible liquids, touching but never really mixing – Lao, Chinese, French, American. There was a sort of laid-back, frontier feel to Vientiane in those days [...] In the early 1970s Vientiane was a city growing tired of war. There were too many internally displaced refugees looking for work, too many young and educated Lao questioning what was happening to their country [...] Many Lao felt their country had been used, and the city reflected their concerns. In 1980, I returned to Vientiane for the first time after the change of regime in December 1975, for the fifth anniversary celebrations. The city had lost its spontaneity: it had a closed-down feel about it. You could see it in people's eyes, and sense it in their reluctance to talk. [...] the

⁹ Cf. Pholsena & Banomyong 2006.

¹⁰ Stuart-Fox in Askew *et al.* 2007, xx–xxi.

economic life of the city was moribund. It was not that people weren't busy, but street sweepers swept because they had been told to and gardeners grew vegetables to keep their families alive, while the downtown commercial area remained silent and shuttered down. Five years later there was a glimmer of change, more colour, more movement, but still the wariness in people's eyes, still the poverty in their daily lives, still the socialist conformity – except for the Party hierarchy, whose families had appropriated comfortable villas and official cars. Everyone else rode bicycles, still at a leisurely Lao pace. [...] In the 1990s tourists began trickling in, stimulating private enterprise and services. Souvenir shops, new restaurants and the first private guesthouses opened. Women made up; young girls wore jeans again. There were a lot more motorbikes on the streets, and more cars. Western aid agencies and non-governmental organizations were in evidence. The city was livelier, the people more relaxed. [...] Markets flourished. There was still, of course, poverty; but the city was a happier place. Vientiane today still has something of the relaxed charm of a provincial capital, at least for the jaded big-city tourists. But for those who have seen the city change over the last 40 or more years, it has taken on a new air of activity, even modernity...

Even though my first meeting with Vientiane was as late as 1995, I have also witnessed many changes. In fact, it was one of these changes, caused by modern urban development, which threw me into my PhD research project, which I finished last year.¹¹ Marginalised or not today, Vientiane was nevertheless one of the important principalities of the middle Mekong Valley in the eighteenth century. Two centuries earlier Vientiane was the capital of the Lan Xang kingdom, which once ruled the entire region of the middle Mekong, and one of the main political units of the entire mainland Southeast Asia: an early urban society, inhabited by people with urban minds.

Spatial and temporal organisation in other words

Debates on spatiality and the concepts of place, space and landscape, as well as their relations to each other, have increased in archaeology and neighbouring disciplines over the past forty years.¹² When working in Vientiane, I have been inspired by the general starting point that place is neither a fixed nor a permanent frame of reference *inside which* events occur, but instead a result of interactions.¹³ It is an active rather than a passive entity. I have been thinking, reading and writing about Vientiane as a socially constructed place, a materialisation of the imagination of different groups and individuals, their desires and expectations, reflecting various attachments and meanings. These attachments and meanings may be different and contrasting for different groups or individuals, both at any specific time and over time. Therefore, definitions of different aspects of place vary.

Traditional Southeast Asian archaeology is based on Western definitions of state and civilisation. However, when working in a context where other ways of understanding the concentration of political power and increasing population (i.e. urbanisation) are valid, I would argue that the best way to describe these devel-

¹¹ Karlström 2009.

¹² Cf. Tuan 1977; Tilley 1994; Feld & Basso 1996; Olwig & Hastrup 1997; Ashmore & Knapp 1999; Crang & Thrift 2000; Bender & Winer 2001; Low & Lawrence-Zúñiga 2003.

¹³ Latour 1987, 228.

opments is to apply the definitions used in that particular context. It was difficult to talk about and think in terms of *state formation* and *developments of civilisation* when the object of study, Vientiane and its people, rather operates in terms of *mandala* and *meuang*. Connected to this is the definition of *urbanism* and the dichotomised relations between centre and periphery, monumentality and the ordinary, and between tangible and intangible, the latter of which, or perhaps all of which, I find problematic. Additional difficulties arose when I tried to identify the study object itself. I had to find, at least for myself, a valid definition of Vientiane in a historical perspective, as well as of its people whom I was going to include in my project. The fundamental concepts for a Western definition, such as the nation and the city (modern and historical), ethnicity, linguistics, identity and culture, had to be analysed and adapted to the *Lao culture area*, which was the focus of my study.

Even though terms and concepts in traditional Southeast Asian archaeology depart from how others than the groups or individuals living in Laos define place, I nevertheless represent the outsider in this situation. For me it is impossible, and not even desirable, to describe and define Vientiane from the inside, which is why I instead aim at incorporating and merging different perspectives in my own interpretation of what Vientiane is and was as an urban area.

Urbanism

The term 'urban' becomes meaningful only when studied in relation to and contrasted with surrounding and peripheral contexts, the hinterland. It is exemplified by multiple variables, and needless to say it is context specific. Urbanism is a modern concept. It developed from the term *civilisation* in the early twentieth century and was discussed in relation to this overarching concept. Early works from colonial times on the history of Indochina¹⁴ and later, as well as more general books on the history of Southeast Asia¹⁵, discuss urban centres from an evolutionist perspective, as the glorious crown of civilisation. Kingdoms, states and early cities were studied in their most characteristic period of history, the one in which their civilisation reached its highest point according to the definition of 'high' and 'low' in the nineteenth century. A reaction to this can be seen in the following decades. Paul Wheatley, for example, notes in his book on urban origins, which is based on his experience of working in China¹⁶, that archaeological excavations have been confined almost exclusively to the environs of monumental complexes at the expense of the territory that supported them. This was occasionally emphasised by scholars who specialised in the history of Southeast Asia, concurrently with an increasing interest in the city as a ceremonial centre, as a symbol. It was suggested that the city could be regarded as a symbol for transcendental order counteracting chaotic forces, external and infernal, and as a symbol for an ideal human spirit of community.¹⁷

In contemporary Southeast Asian archaeology, however, the traditional way of perceiving urbanism as the study of civilisations still prevails. There is a focus on the physical and the general, on what happened inside the urban centres, and on how the kings and the elites organised their lives and surroundings. In cities, how-

14 E.g. Mouhot 1864; Garnier 1885.

15 E.g. Coèdes 1962; Groslier 1966.

16 Wheatley 1971.

17 Tuan 1977, 150,173.

ever, the majority of urban dwellers are not elites; they are members of ordinary households.¹⁸ Even if that were the case, most literature and research on this topic focus on the elite. They treat the emergence and development of states in socio-cultural evolutionist explanations as the result of economic and social complexity, long-distance exchange, agriculture and maritime trade, access to productive rice lands, control of strategic resources, expansion of population, specialised activities, and centralisation of wealth and power.¹⁹ Even though some scholars include the social and symbolic roles of urban centres and acknowledge these centres as not only political and administrative foci but also ideological and religious foci that played an integral role in the way Southeast Asian societies were ordered and defined, the inside is the centre of attention. Although the existing ideas and definitions of urbanism are numerous and complex, and although some scholars also recognise the Southeast Asian urban centre as a modern and global phenomenon in a postcolonial perspective²⁰, attention is still focused on the physical characteristics of urbanism. The neglect of peripheral areas, of the intangible, and of what happened with the ordinary people in areas outside the urban one (the greater physical part of the society) results in an ascription of value of the urban as more important than the hinterland, the centre over the periphery. I wish to emphasise here that neither centre nor periphery can be defined without relating the one to the other and that they are equally important for our understanding of the past.²¹ It might not always be so easy, either, to distinguish a sharp border between what is inside and what is outside the urban; and moving between inside and outside, physically as well as mentally, is in fact a very common phenomenon.

Let me illustrate this with the example of Vientiane. As mentioned earlier, Vientiane has always been regarded as a marginal place, at least in modern times. We relate the modern city of Vientiane to the concept of urban centre, and in that perspective Vientiane is peripheral compared to other modern Southeast Asian cities. Compared with larger, richer and more famous archaeological sites in the capital cities of surrounding countries, Vientiane stands out as the most peripheral. But if we look at it in a historical perspective, Vientiane is at the centre. This view is also confirmed if we look at Vientiane in a contemporary Lao perspective. As the largest modern city of Laos, founded on the ruins of the ancient royal capital, Vientiane attracts many people to move from the countryside and settle in the city to increase their daily standard of living. The structure of the modern dwellings is reminiscent of countryside villages, but here the houses and villages are located close together, forming an urban landscape, which for an outsider seems homogenous. Within central Vientiane, demarcated by the outer city wall, there are around 100 villages, each of which has a population of between approximately 500 and 2000 people. Each village has a small centre, with their own village administration, which operates from the village chief office where between two and six officers work. When asking people in Vientiane where they come from or where they live, the answer almost always relates to a village within Vientiane rather than to the actual city of Vientiane.

As we can see, there are many different layers of centres here, and the centre-periphery discussion is consequently highly relative and cannot start out from

18 Smith 2003, 1–2.

19 E.g. Guillon 1999; Higham 2001, 2002; Trigger 2003; Glover & Bellwood 2004; Stark 2006; O'Reilly 2007.

20 E.g. Askew & Logan 1994; Logan 2002; Bishop *et al.* 2003.

21 Rowlands 1987, 1–11; Champion 1989.

anything other than its specific context. The specific context here also requires that we understand the concepts of *mandala* and *meuang*.

Mandala and Meuang

The term *mandala* is occasionally used in literature describing early state formation in the region which now constitutes Laos.²² It is a term of Hindu origin that is also used in other religious contexts including Buddhism. *Mandala* is a general term for any illustrations that model an idea of the cosmos, metaphysically or symbolically. It represents a microcosm of the universe, including the human body, the mind and the surrounding world in which one lives. It should also be mentioned that this metaphor is used not only in Hinduism and Buddhism but also in many other religions. The representations look different within different religious practices. In Tibetan Buddhism, for example, a sand *mandala* is occasionally created on the temple floor. It takes days to finish, and several monks do the work. They 'paint' an intricate, geometric pattern with coloured sand, in a traditionally fixed design, which represents the objects of worship and contemplation of the Buddhist cosmology. After completion, the sand is brushed together and 'blown' away to spread the blessings of the *mandala* and to emphasise impermanence,²³ which is a central teaching of Buddhism.²⁴ In general, and for ordinary Buddhist people, *mandalas* are used as an aid to meditation.²⁵

Mandalas are also considered to be sacred. As such, the *mandala* concept is used to model the structure within and among societies. A society that is structured in accordance with a *mandala* is focused on sacred centres as material and immaterial statements of the worldly power of the king, rather than on territorial units. One example of this is the That Luang in Vientiane. According to Lao, Thai and Cambodian traditions, the Indian emperor Ashoka played a significant role in the spread of Buddhism about 1700 years ago, and his name is linked to the construction of many important religious monuments.²⁶ As one of the earliest propagators of Buddhism, he left India to spread the teachings of Buddha in the surrounding countries, and one of the missions he sent out is said to have laid the foundations of what is now That Luang in Vientiane²⁷ the national monument of the Lao nation. That Luang is said to have been erected by Ashoka's mission as a commemorative edifice, sheltering one of the 300000 relics of Buddha that were supposed to be spread along with Buddha's teachings. The monument has been rebuilt several times since then. One of the main rebuildings was when King Sethathirat moved the Lan Xang capital from Luang Prabang to Vientiane in the 1560s. Canals were constructed, on which the king was transported from place to place. These were laid in linear axes, emanating from this central point. The official name of the central monument was 'Summit of the World', which reflects the importance it had for the king in following the Buddhist and Hindu sacred orientations and models of an ideal universe. The directional alignments formed a sacred centre, and the erection of a stupa in this particular place was seen as

22 Cf. Wolters 1982, 6–17; Stuart-Fox 1997, 7–19, 1998, 13–22; Evans 2002, 6; Askew *et al.* 2007, 16–72.

23 Karlström 2005.

24 Robinson & Johnson 1997, 34–42.

25 Robinson & Johnson 1997, 124.

26 Engelmann 1996, 11; Glover 1998; Robinson & Johnson 1997, 62.

27 Cf. Phouvong 1954.

Plate 3. That Luang, the central point in the Lao mandala. Photo by the author.



a necessary and auspicious act by the king to give protection and glory to the kingdom.²⁸ According to this metaphor, the *mandalas* were also called 'circles of power' or 'galactic polities' (Tambiah 1976; Wolters 1982). This means that the *mandala* was not a fixed territory, but rather consisted of relatively fluctuating entities where smaller surrounding states were drawn directly into the realm of a certain *mandala*, or became connected to an adjacent *mandala*, or returned to autonomy.

This *mandala* pattern is not only valid on the 'higher' level described above. In Vientiane there is the national monument That Luang (Plate 3), but there are also monuments with a similar function in each of the city's villages, and even down to the level of private gardens and houses one can find similarly structured patterns of spatial organisation. The constituent parts of the larger *mandala* were political entities in their own right, known as *meuang*. Each *meuang* replicated the structure of the *mandala* of which it formed a tributary part (Stuart-Fox 2002:3). This was more about defining systems of relationships between people from village to city levels than a mere structuring of territorial and political space. The ruler of the *mandala* was the king, and for the *meuang* a lord or such-like was in the position of decision-making. The different *meuang* were virtually autonomous and could collect their own taxes and enforce their own justice. Frontier *meuang* could always change allegiance and could expand by including other *meuang*. This happened in the fourteenth century when Lan Xang was founded. Fa Ngum functioned as the catalyst, forcing several *meuang* into the powerful *mandala* of Lan Xang. It must also be mentioned here that the *meuang* did not need to share a common culture within itself.

Meuang is still used today in both Laos and Thailand as a term to define space. It is also the basic concept when people (metaphorically) relate to their specific group of origin or ancestry and to their place of origin. Marc Askew describes how the Lao historian Maha Sila Viravong analysed the meaning of *meuang* as a Lao word used by people living in Laos. First, it refers to any urban area, such as Meuang Vientiane or Meuang Champassak, and second, it refers to a country, such as Meuang Lao or Meuang Thai. Maha Sila Viravong claims that the Lao term *xiang* (or *viang* or *chiang*) is related to the term *meuang* as they are regarded as complementary pairs, and he further mentions that the earliest meaning of

²⁸ Askew *et al.* 2007, 23.

xiang/viang/chiang was a walled or moated settlement. In his analysis, Maha Sila Viravong also traces the uses of Sanskrit and Pali prefixes and suffixes, such as *nagara* and *pura*, which are equivalent to 'urban' and which in Tai-Lao languages turned into *nakhon* and *buli*. Another Pali-influenced word used in the case of Vientiane is *chantana*, which means sandalwood, a word that in Lao turned into *chan*. Others argue that *chan* is a short form of *Chanta Burisri*, which is also an ancient name and means 'city of the moon'. Furthermore, we can trace the term *sattanak* to the Pali words *satta* and *naga*, in Lao also *nak*, which means both the number seven and serpent, and has its explanation in the legend of the seven-headed serpent who gave the city its name. This very brief account of conclusions drawn by Maha Sila Viravong and others, more thoroughly discussed and analysed elsewhere,²⁹ can give us an idea of why Vientiane historically has been called by many different names, such as Nakhon Viang Chan, Chantabuli, and Chantabuli Si Sattanak.

In conclusion, we have seen that *mandalas* and *meuang* were interrelated with Hindu and Buddhist concepts, and that they represent a structure deeply filled with, and thus reinforced by, these beliefs.³⁰ This structure formed the basis not only for a physical but also for a whole symbolic and imaginary landscape, which in turn formed the political and social order in the entire mainland of Southeast Asia as early as 1500–2000 years ago. *Mandala* and *meuang* structures continue to permeate the idea of how the surrounding world is constituted in Laos today. Therefore, the meaning and significance of these concepts must not only be taken into consideration but also function as points of departure when the past of Laos, as well as urbanism in Southeast Asia in general, is discussed. Thinking in terms of *mandala* and *meuang* also helps us to acknowledge the fluctuating borders of what is inside and what is outside the urban, and that the move between inside and outside is not always noticeable. For that reason, what is inside and what is outside cannot be anything else than equally valued.

The Lao culture area and the growth of urban Vientiane

Focusing now on the temporal aspects of urban organisation, we can look at how the nation-state of Laos with its capital Vientiane has been defined, and on what grounds, throughout history. Who are the urban dwellers today, and who were they in historical times? Let us start on the nation-state level.

There is an inherent problem in any description of a country's history that arises when we try to identify the object of study. This problem is also valid for Laos, since it is difficult to find a clear definition of Laos in a historical perspective.

Is Lao history the history of those territories inhabited by ethnic Lao, or of the state of Laos as it has existed at various times under various names? The Lao have spread far beyond the geographical boundaries of present-day Laos: many more ethnic Lao live in Thailand than in Laos. Moreover, the Lao state ceased to exist as a unitary entity in the early eighteenth century. What was reconstructed by the French nearly two centuries later and what exists today is but a fragment composed of territories belonging to former principalities inhabited by diverse peoples, many of whom are not ethnic Lao.

29 Cf. Askew *et al.* 2007, 24–25, 46, 51.

30 Stuart-Fox 2002, 3; cf. Archimbault 1973.

In this way, Martin Stuart-Fox introduces an article in which he further suggests that this problem should be approached by identifying continuities and discontinuities in the history of Laos.³¹ He argues that the discontinuities appear in the central political structures and that they are marked by changes in extent of political control. He further argues that the continuities are ethnic and based on culture and society, with groups of common descent inhabiting geographic territories and sharing a political culture, which is anchored in the socio-religious Lao worldview – the *meuang* and *mandala*. Stuart-Fox concludes that these discontinuities and continuities must be acknowledged when writing Lao history, but he never clearly states what he means by a distinct Lao culture and society. In this, which at first glance seems like a territorial problem, there is another problem hiding, a problem of ethno-linguistic definitions. I would argue that a worldview is not exclusively inherent in a language, and therefore it is problematic to use *only* an ethno-linguistic definition for a culture region. Culture regions often refer to spaces that have been shaped by the occupation and interaction of people and their landscape over time, rather than to areas demarcated by national borders. A Lao culture region therefore refers to today's Laos and the areas in Thailand, Vietnam and Cambodia that are inhabited by Lao-speaking groups, with their particular social structures, belief systems, and political and economic organisation.³² If we maintain this definition of a Lao culture region, we refer to today's Laos *and* the areas inhabited by *Lao-speaking groups*, which I find deeply problematic. Why could we not include areas inhabited by Mon-Khmer-speaking groups or by Tibeto-Burman-speaking groups as well? No, because these are minority groups in the present-day nation-state of Laos, where the dominating ethnic group is the *Lao Loum*.

[I]t nevertheless must be accepted that the *Lao Loum*, or lowland Lao – like corresponding lowland ethnolinguistic groups in other regions of mainland South-East Asia – were the core population that ultimately shaped the dominant sociopolitical system and symbolic landscape that developed in the Middle Mekong Valley from the thirteenth century.³³

To accept this implies that the history of the 'Lao culture region' – the Lao history and the urban history in this area – starts in the thirteenth century when a Lao *mandala* first appeared. It also implies the exclusion of almost 40% of the country's population, which is the part of the population that is not Lao-speaking and whose pasts are denied. Instead of basing the definition of a Lao culture region on the existence of a Lao *mandala*, which consisted for the most part of a population of Tai-Lao ethno-linguistic origin established in the middle Mekong Valley in the thirteenth and fourteenth centuries, I would rather suggest a wider inclusion of people who think of themselves as being part of the Lao culture today. We should also bear in mind that Lao-speaking people living in this area in the past were definitely not calling themselves *Lao Loum* – this is a modern construction.

Another common way of approaching this problem of origin and authenticity is to suggest that Laos' history started somewhere outside of present-day Laos, as the ethnic Lao are known to have inhabited the area of what is now southern China before the thirteenth century. Some scholars have therefore been searching for the origins of the term 'Lao'. Consequently the territory under study must

31 Stuart-Fox 2002, 1–21.

32 Askew *et al.* 2007, 18.

33 Askew *et al.* 2007, 19.

be expanded to include today's China, the area where the Ai Lao (the original Lao race, according to Maha Sila Viravong)³⁴ first appeared, in order to focus on the origins of the term 'Lao'.³⁵ This approach has been used for nationalistic purposes, aiming primarily at placing the Lao as far back in time as possible.³⁶ However, that is not a very satisfying definition if we want to study what happened specifically in the area of Vientiane before the thirteenth century.

The debate has oscillated between conceptions of the nation as political or as ethnical. Many scholars, prior to those mentioned above, have brought up these problems of definition. They were raised already during the colonial period.³⁷ George Condominas, a researcher who has been influential in Lao culture studies, claims in his ethnographic surveys of the Lao that Laos is a paradox. He says that it is a paradox both as a state and as an ethnic group,³⁸ but he does not clearly express his definition of a Lao culture. Condominas also addresses the fact that there are more Lao people living in Thailand than in Laos. This particular question, the Lao culture in relation to the Thai, has long been a subject for debate. These debates often concern the 'artificial' border between Isan and Laos³⁹ and the larger but more general issue of the relationship between Thailand and Laos, whether Lao people should be included as a group under the Thai or not.⁴⁰ However, this debate is related to the more general issue of the definitions and origins of indigenous people.

'Indigenous people' is a term used to identify an ethnic or cultural group that inhabits a territory with which they have the earliest historical connection or an historical continuity. At no time has the territory known today as Laos been ethnically or culturally homogenous. I do not believe that we can conclude the identification of Laos in a historical perspective by identifying the country's indigenous people. It is difficult, and often risky, to try to identify indigenous people historically in one way or another. It is a modern term, created by and primarily for those who are not indigenous. Even though there are good reasons (allowing indigenous people to participate in decision-making, etc) behind such a labeling, and even though many groups defined as indigenous have gained something from these postmodern politics, indigenisation is still very much about including and excluding individuals or communities. Adam Kuper argues that the term 'indigenous' is still the equivalent of *native*, *primitive*, *tribal* and *nomadic* in the rhetoric of the indigenous people's movement.⁴¹ He also argues that the assumption that 'descendants of the original inhabitants of a country should have privileged rights, perhaps even exclusive rights, to its resources' leads to the conclusion that 'immigrants are simply guests and should behave accordingly',⁴² and that this rhetoric is popular among and easily abused by extreme right-wing parties in Europe. The concerns of this indigenous people's movement, encouraged by the UN, the World Bank, and by international development agencies and NGOs, are not only

34 Viravong 1964.

35 Cf. Briggs 1949, 63–67.

36 Cf. Viravong 1964, 9; Rattanaovong 1995, 266–268.

37 Cf. Le Boulanger 1931, 9.

38 Condominas 1970, 9–10.

39 Cf. Le Bar *et al.* 1964, 215; Keyes 1967; Grabowsky 1995.

40 Cf. Evans 1999, 5ff. This was attempted when Siam changed its name to Thailand in 1939 and was a way of stating that all Thai people, i.e. the Tai-Lao-speaking people, should be embraced by the same nation-state.

41 Kuper 2003, 389.

42 Kuper 2003, 390.

about land and hunting rights but also about culture and identity. The assumption that one has rights only if one has a certain number of appropriate grandparents implies that a 'drift to racism may be inevitable where so-called cultural identity becomes the basis for rights, since any cultural test (knowledge of a language, for example) will exclude some who might lay claim to an identity on grounds of descent'.⁴³ It means we are back to searching for the origins to justify the right to history, whether individual or collective. Throughout history people have moved, and continue to move. Therefore, the basis for the idea that people belong to the place where they were originally settled becomes unrelated to reality, both past and present. In conclusion, I would argue that these 'indigenous groups' or 'ethnic minorities', or people who did not share political and economic power with dominant groups, are thus important for the understanding of the cultural formations of a specific region.

Let us turn our attention back to Laos, where the *Lao Loum* – the Tai-Lao group which is the majority today – stands for the urban and the developed, whereas the others – the Mon-Khmer and the Tibeto-Burman groups who constitute the ethnic minorities in Laos – represent the non-urban, rural and less developed part of the population. If we accept the common view that the Mon-Khmer-speaking groups were the indigenous people of the area that is Laos today, and that these groups were consequently the first to establish urban centres in this area 1500 years ago, we can thus agree that the ideas of the urban – form, function and meaning – very likely were quite different from those existing today. If not, that is, if the bases for urban growth and development were the same for the Mon-Khmer as for the Lao 600 years later, this could be used as an argument against the nation-state's oppressive approach towards the ethnic minorities in the country.

In the introduction to this section it could be read between the lines of Stuart-Fox, Askew and others that Laos must be seen as a political fiction. I would argue, with Grant Evans, that Laos is neither more, nor less, a political fiction than any other modern state.⁴⁴ Writing the history of Laos, we must therefore view the question of what Lao culture and society is and was as a modern phenomenon. We must also acknowledge that cultural identity can operate in several registers, and that local traditions are appropriated and woven into a national narrative. This means that a Lao culture area encompasses, 'Thailand, Laos, the Shan, and the Tai Lue of Sipsong Panna, and also Cambodia, and Burma. [...] this culture area is part of an *oikoumenê* which includes Vietnam and other parts of peninsula and insular Southeast Asia, and other Sinicized Tai groups',⁴⁵ from a general geographic and culture-historical perspective. From a cultural identity and ethnic perspective, it also encompasses Tai-Lao-speaking as well as non-Tai-Lao-speaking people who regard themselves as Lao because they live in the modern nation-state of Laos, or because they feel they possess a sense of Lao-ness.

Cosmopolitan Vientiane

Cultural identities and ethnical perspectives must be taken into consideration when we define who is urban and who is not. On the one hand, the urban people

43 Kuper 2003, 392.

44 Evans 1999, 16.

45 Evans 1999, 15.

of today's Laos – the *Lao Loum* – generally speaking demarcate themselves from the non-urban population (by riding motorbikes, wearing jeans, and speaking on cell phones on their way to one of the numerous internet cafés), but on the other hand they also live to a large extent as 'villagers' in their smaller units, i.e. the villages, within the city (by owning paddy fields within the urban area where rice is grown, keeping gardens, having a strong connection to the land and to the village history, and an own administrative organization on the village level).

In addition to this, there are different subgroups in the urban area that are connected to each other for reasons that are not geographical or historical. Many foreigners work for different international organisations and they are socially and culturally connected to each other and constitute quite a large community. There are also groups of people living physically scattered in the urban area but strongly socially connected to each other because they come from one of the southern provinces of Laos. Yet another example of these urban subgroups is the Vietnamese, who are referred to by the anthropologist Warren Mayes in his research on Vientiane. He explores a forgotten urban minority, the ethnic Vietnamese community, and their attempts to express their origins through a resurgent cosmopolitanism and with their discovery of new opportunities for association and expression through a commodity: namely a vintage Italian motor scooter.⁴⁶ In the same way as Mayes argues for this specific group, I argue that the formation of these contemporary urban subgroups illustrates the need to express a kind of 'third space',⁴⁷ which is something new, neither quite Lao nor foreign, but rather cosmopolitan, developing within urban Vientiane.

To conclude, we have seen that the urban in a Lao perspective is based to a great extent on the structures of the *mandala* and the *meuang*. The urban mind has been, and is, influenced by outside forces such as population growth, increasing economic and social complexity, resources, exchange and trade, and even foreign invasion and climate change, for example in the thirteenth century. But the urban mind is also, and maybe primarily, influenced by a cultural and socially constructed perception about what it means to be urban. This structure formed, and forms, the basis not only for a physical but also for a whole symbolic and imaginary landscape that has shaped the political and social order in Southeast Asia during the last 2000 years. A fundamental characteristic of this *mandala/meuang* structure is its continuous ability to change: the urban structure can be found on the village (in the city) level, and in the village the non-urban elements are important. There are different levels of urban and non-urban in Vientiane, and the borders between inside and outside the urban fluctuate and change.

I hope that this example illustrates that a study of the urban means including social and material as well as symbolic aspects. Fundamental to this cosmopolitan approach is that all cultures 'have enough overlap in their vocabulary of values to begin a conversation'.⁴⁸ So, if we who study urbanism engage in these wider social and political conversations, context-specific studies like this might also be useful for studies elsewhere, even in places and urban areas where other structures than the *mandala* and *meuang* dominate.

46 Mayes 2009.

47 Bhabha 1994, 53–55.

48 Appiah 2006, 57.

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24. Conceptualising the Urban Mind in Pre-European Southern Africa: Rethinking Mapungubwe and Great Zimbabwe

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ABSTRACT

Until the last two decades, the archaeological study of urbanism in pre-colonial Africa¹ has mired in racial prejudice. There was a well-rooted perception within the colonial mindset that Africa was quintessentially rural in character. This situation was nurtured by a Eurocentric conceptualization of urbanism. Such perceptions naturally discounted many pre-colonial centres in Africa as urban in character or origin. In situations where African towns and cities conformed to European traits, these were attributed to foreign colonization or external trade with the outside world.² There has also been increasing concern on the archaeological identity of African urbanism given that the baseline definitions were Western derived.³ Mapungubwe and Great Zimbabwe, the first major towns in pre-European southern Africa, have not escaped these prejudices,⁴ as they

1 See e.g. Sinclair *et al.* 1993.

2 McIntosh 1997; LaViolette & Fleisher 2009

3 McIntosh & McIntosh 1993; McIntosh 1997; McIntosh 1999.

4 Pikirayi 2001.

remain poorly understood in terms of the dynamics of social formation they represented or identified with. While we concur with the broader picture from archaeology that they represented major centres of socio-economic and political power, there is scant information on the internal and regional dynamics of these centres and the settlement constellations or hierarchies they presided over.⁵ The narratives of these places, as with so many other towns on the Zimbabwe plateau and in the adjacent Shashe-Limpopo basin, are centred in the courts of kings and nobles whose power was felt in territories beyond. We need to rethink beyond these royal courts to fully understand the development and character of these urban centres in southern Africa.

What we define here as the urban mind in southern Africa is patterned human behaviour that encouraged and limited, rather than discouraged, agglomeration and population dispersal. We explore this in the key areas of monumental architecture and its symbolic meaning, settlement patterning at the local and regional scales, metallurgy and industrial production, trade and exchange, and abandonment of settlement and population dispersal. We accept that patterns exist in the usage of space, but in this chapter we argue that authority and power define space, and accordingly there is a connection between space and authority. The importance of residential space extends to non-built areas such as middens. We use anthropological, archaeological and architectural approaches in collecting information on space while at the same time employ aspects of cognitive psychology⁶ to understand the social dynamics of the prehistoric urban dweller.

Introduction

Urbanism is associated with the development of town centres or cities which perform specialized functions in relation to broader hinterlands.⁷ These towns and cities in southern Africa comprised permanent settlements within the larger territory that enjoyed interactive and symbiotic relationships with the rural hinterland.⁸ Pre-colonial urbanism in southern Africa is synonymous with the development of socio-political complexity, narrowly conceived in terms of societal aggregation from egalitarian forms of social organization towards state-level social organization. This is so because elsewhere in Africa urbanism developed outside the frameworks of states and chiefdoms⁹ and the two trajectories are not necessarily in tandem. While social evolutionary theories would suggest this was the trend,¹⁰ the path towards social complexity in southern Africa remains poorly defined or little understood.¹¹ Generally however, characteristics reminiscent of urban development are visible in the archaeological record around the 8th century AD among settlements in southern Africa. This development is thought to have initially started in the Shashe-Limpopo basin associated with agro-pastoral societies identified archaeologically with Zhizo and later Leopard's Kopje cultural entities. The region's first urban settlements become evident in the archaeological record on such sites as Bambandyanalo and Mapungubwe, dating from the 9th to 13th centuries AD, taking advantage of floodplain agriculture, the abundant wild animal resources in the middle Limpopo floodplain and adjacent plateau, gold and other precious commodities which were then traded with in-

5 Garlake 1973; Huffman 1996.

6 E.g. Anderson 1995.

7 McIntosh 1997.

8 Cowgill 2004.

9 McIntosh 1997.

10 See e.g. Carneiro 1981.

11 Pwiti 1996; Pikirayi 2001.



Fig. 1. Southern Africa showing sites mentioned in the text.

habitants of the eastern African coast and the broader Indian Ocean maritime world.¹² It should be remembered that similar developments occurred elsewhere within the Shashe-Limpopo basin and involved the transformation of communities identified with Zhizo and Toutswemogala agro-pastoralists, which resulted in the growth of towns primarily driven by a cattle economy.¹³ These events, seen in much of western and south-western Zimbabwe and adjacent eastern Botswana (Fig. 1) are given peripheral treatment in current archaeological explanations of the development of socio-political complexity in the Shashe-Limpopo basin. Pre-European urban development may have reached its peak, not during the time of Mapungubwe (AD 1220–1300) with its vibrant gold, ivory and glass bead trade, but Great Zimbabwe (AD 1280–1550) whose monumental architecture displays the considerable wealth, economic and political power, and regional influence of its creators.¹⁴

The evidential basis for the origins of socio-political complexity and the growth of urbanism in pre-colonial southern Africa comes towards the end of the 1st millennium AD when a number of important changes are noted in the archaeological record. These concern the economic, social, political and cultural organization of the agro-pastoral societies that became nucleated at particular localities, stratified and more complex in their socio-political organization. The archaeological correlates to this are the growth in the size, number and nature of settlements. At the intra-site level there is evidence of differentiation of people in terms of residence and by extension status, as such settlements are also large and complex in terms of layout. These sites include Schroda, Bambandyanalo (K2) and Mapungubwe in the middle Limpopo valley, and Mothudi, Toutswemogala and related sites in eastern Botswana.¹⁵ The growth of state societies and urbanism in the region is informed by the settlement dynamics of these towns.¹⁶ In this chapter, we examine the dynamics of urban development in the Shashe-Limpopo

12 Sinclair 1982; 1987; Huffman 2000, 2005, 2007; Manyanga 2007.

13 Denbow 1984, 1986, 1997.

14 Pwiti 1997a.

15 Lane *et al.* 1998.

16 Tsheboeng 2001; Mothulatshipi 2008.

basin of southern Africa and the adjacent Zimbabwe plateau with a view towards understanding the growth of socio-political complexity in the region. Available new data¹⁷ provide compelling evidence critical in challenging conventional interpretations on how social formations in southern Africa may have aggregated to form chiefdoms and states. We focus on the spatial layouts of the towns of Mapungubwe and Great Zimbabwe, as well as their immediate cultural landscape, and explain how these centres may have operated.¹⁸ Also included in this discussion is the analysis of the spatial context of the two towns in relation to broader regional settlement patterns. To understand the relationships between space and society in and beyond these towns, we explore some ideas on space syntax. Our objective is to provide a fresh discussion on the connectivity and integration between urban spaces and their rural or less urbanised hinterlands.

Archaeological evidence for urbanism in southern Africa

Despite all the unresolved issues relating to urban development and the associated socio-political complexity, a number of attributes are generally considered as defining urbanism in southern Africa. While the evidence varies from one site to another, attributes like population agglomeration, monumental architecture, specialization, and functional interdependency between hinterland and centres for goods and services and the symbiotic circulation of goods essential for subsistence are indicative of urbanism in southern Africa. These attributes are evident at such sites as K2/Bambadyanalo, Toutswemogala, Mothudi, Mapela, Mapungubwe, Great Zimbabwe, Khami, and Danan'ombe, and many others in the region dated between AD 900 and 1500.

Population agglomeration

By AD 900 several communities in southern Africa were concentrating in large settlements characterized by large populations. Evidence for nucleation during the formative years comes from the Shashe-Limpopo basin where it was confined to hill edges overlooking the Limpopo and tributary river floodplains.¹⁹ The nascent settlement hierarchy shows two levels of settlements: larger nucleated settlements and smaller settlements representing household units scattered throughout the valley. In the middle Limpopo valley, these were mostly concentrated along the hill edges and river valleys. The ceramic evidence from both the larger and smaller settlements suggests the sites were part of a single settlement system. Some individual sites also show intensive occupation in both the elevated and low-lying areas of the associated landscape. Even some of the 'commoner' settlements show a high level of nucleation with some occupation mounds extending over a radius of at least 250 metres. At Malumba for example, the entire hill section is heavily terraced and littered with traces of past human settlement.²⁰ The area below the hill was equally heavily settled. A similar intensity of occu-

17 Manyanga 2007; Smith 2005; Mothulatshipi 2008.

18 Huffman 1996, 2005, 2007.

19 Manyanga 2007.

20 Manyanga 2001, 2007; Manyanga *et al.* 2000.

pation exists at Mapela Hill, possibly representing a high level of socio-political organization and urban development comparable to Mapungubwe.²¹ These site clusters are indicative of urbanism, a pattern of settlement organization suggestive of socio-political complexity.

The ecological setting of the Shashe-Limpopo basin attracted farming communities which resulted in population agglomeration.²² Settled life led to population agglomeration and increase, which in turn led to urban formations. The sharing of restricted space by such large populations demands the development of other socio-political structures to bring order to the place. The large number of Zhizo, K2 and Mapungubwe period sites dated to between the 9th and 14th century is indicative of urban development. Huffman suggested a population model for the Shashe-Limpopo valley which shows that population increased tremendously during the 12th and 13th centuries AD.²³

From around the end of the 13th century when Mapungubwe and its satellite centres declined, population agglomerations are seen on the south-central Zimbabwe plateau, with Great Zimbabwe at the helm. By the end of the 13th century, Great Zimbabwe, some 750 hectares in extent, was the capital of the largest state in southern Africa, accommodating a population of between 11000 and 18000 people.²⁴ Post-Mapungubwe town centres were constructed of elaborately shaped stone, expressing the wealthy nature of the ruling class who financed such projects. By the mid-15th century, when the influence of Great Zimbabwe as a city and centre of a territorial state is thought to have slipped away, prominent urban centres grew in western, central and northern Zimbabwe at Khami, Danan'ombe, Manyanga, Zvongombe, Baranda, among others.²⁵ These were mostly marked by elaborate stone architecture, expressing both the public and private domains. These centres are also expressive of the shifting political and economic power at the level of chiefdoms and states in the various ecological zones in tandem with resource availability and other opportunities.

Trade

Urban centres are hardly self-sufficient and enjoy an interdependent relationship with their broader hinterland. Large-scale agricultural production is done outside the city and so are other resource extraction activities like mining and hunting. Urban centres thus provide a ready market for goods produced in the broader hinterlands. This relationship between the hinterland and the city developed in a context leading to higher levels of socio-political complexity as local and regional as well as international trade called for administration and organization to control the procurement, production and distribution of goods.²⁶ By the 9th century this trade was well established in the entire southern Africa region with all the key centres firmly integrated into the western Indian Ocean commercial network.²⁷ Exported trade items include ivory, gold, copper, animal skins and basic food

21 Garlake 1968.

22 Huffman 2007; Manyanga 2007.

23 Huffman 2000, 2007.

24 Huffman 1977; 1996; Pikirayi 1997a.

25 Pikirayi 1997a.

26 Garlake 1978; Sinclair 1987; Mudenge 1974; Pwiti 1991.

27 Summers 1958; Huffman 1972; Wood 2000, 2005; Sinclair 1982; Swan 1994; 2008; Reid & Segobye 2000.

stuffs. It is clear from historical sources that places of pre-colonial metalworking like Musina, Rooiberg and Phalaborwa differ significantly from the recent industrial times where mining areas became urban centres.²⁸ In pre-European Africa, mining sites did not attract any urban development. However, they supplied raw materials which contributed to the development of urban centres elsewhere; for example, Rooiberg has been linked with Mapungubwe, Great Zimbabwe and Khami.²⁹ In some cases, the centres hardly controlled the ore sources and instead just extracted surplus from the metalworkers through trade and other redistributive mechanisms such as tribute.³⁰ Most of the exported items were exchanged for glass beads, cloth and glazed ceramics.³¹ Most agro-pastoral sites from southern Africa have evidence for external trade in both imports and exports. Glass beads of various sizes, colours, shapes and provenances have been recovered from all the major early second millennium AD urban centres in southern Africa.³² The presence of worked ivory from places like Schroda, Mwenezi Farm, Malumba and Mapungubwe indicates that the commodity was probably meant for local use and for the international market.³³ While trade implicates the existence of specialists, historical and ethnographic sources in southern Africa suggest the continuation of agro-pastoral activities to support the highly consumptive socio-political formations.

Monumental architecture

Monumental architecture and other major public works are generally regarded as reflective of nucleation of populations and higher degrees of socio-political complexity.³⁴ The architecture reflective of urban forms in southern Africa comes in the form of dry stone walled monuments. These walls acted as screens which hid away both the living and ritual activities of the ruling elite.³⁵ Some of the walling demarcated activity areas and restricted movement to particular areas of the settlement. From about the 11th century AD, settlements in southern Africa assumed at least two distinct patterns: those represented by commoner settlements on hill edges and flat valley areas, and those which assumed a hilltop location, associated with the elite. Some of the latter had stone walling.³⁶ These settlement patterns are indicative of different classes of people. The stone walled monuments symbolized prestige and status. Stone walling in southern Africa is a reflection of a community's ability to sponsor the construction and a strong economic base to support the construction work.³⁷ Those in charge tasked the coordination of public works. Monumental buildings symbolize the concentration of social surplus. Numerous commoner and elite Mapungubwe and Zimbabwe settlements are known from southern Africa.³⁸ Elite residences are distinguished from ordinary residences by virtue of their being walled and located on elevated

28 Swan 2008; Chirikure 2010.

29 Grant *et al.* 1995.

30 Chirikure 2007; 2010.

31 Hall 1987; Pwiti 1991; Connah 2001.

32 Wood 2000, 2005.

33 Hanisch 1980; Voigt 1981, 1983; Manyanga 2007.

34 Renfrew 1972, 1983; Hass 1982.

35 Garlake 1973; Connah 2001.

36 Huffman 2000.

37 Pikirayi 1997a; Connah 2001.

38 Huffman 2000; Manyanga 2007.

positions relative to the rest of the settlements. Mapungubwe and Great Zimbabwe reflect such patterns, as well as distinct regional hierarchies – an attribute that has attracted substantial spatial and cognitive studies in southern African archaeology.³⁹ While we respect current structuralist approaches to explain the urban monumental representation of these cities, we contest the idea that these places were pre-designed prior to occupation. Our conceptualization of urban development is that towns and cities like Mapungubwe and Great Zimbabwe grew with time, each generation adding new structures to accommodate the needs of a growing urban metropolis.⁴⁰ Key to understanding this is the use of relevant ethnographies that address issues of kinship and leadership in pre-colonial southern Africa.⁴¹ The collateral system of succession implied by this pattern, reflected in the great amount of stone walling, is an important aspect of the pre-European urban mind in southern Africa and requires further archaeological testing.

Occupational diversity

In the towns and cities and their hinterlands individuals engaged in different activities with production extending beyond subsistence levels, carried out by, among others, crafts specialists, smiths and smelters, traders and merchants. Within this network of horizontal differentiation there was also an effective system of integration in which the various specialists distributed their products to the overall populace. These aspects of economic diversification have been recorded in southern Africa in items like imported and local pottery, glass beads, copper and iron objects. The widespread occurrence of similar or related ceramics over a large area in southern Africa characteristic of these towns is indicative of the trade being conducted by specialists. Related ceramics together with other cultural attributes over such a wide area also emphasize the complex networks and interdependence of communities in pre-colonial southern Africa. The presence of copper and iron objects is also widespread on all sites investigated. There is ample evidence for the processing and use of metal products in all of southern Africa's early urban centres. However, debate is ongoing on the supposed link between metallurgy and urban development in southern Africa.⁴² New data seem to suggest that pre-European mining did not attract any urban development, although the mining areas provided the urban centres with the products they needed for their day to day lives. Other activity widely practised in southern Africa was the spinning of cotton which is represented by the perforated discs of potsherds known as spindle whorls. These have been recovered from several archaeological sites, showing that spinning and weaving may have been widespread in the region.⁴³ While some spinning of cotton may have taken place at the key urban centres, the production of the cotton was done throughout the Limpopo valley.⁴⁴

39 Huffman 1996, 1997; Beach 1997; Bourdillon 1997; Denbow 1997; Hall 1997; Lane 1997; Pikirayi 1997b; Pwiti 1997b; Sinclair 1987.

40 See also Chipunza 1994.

41 Manyanga 2007; Chirikure & Pikirayi 2008.

42 Herbert 1993; 1996; Kiyaga-Mulindwa 1993; Calabrese 2000; Chirikure 2005, 2007; Swan 2008.

43 Davison & Harries 1980; Hall 1987.

44 Elton 1873.

The region accordingly exhibits a high degree of functional specialization that is considered indicative of urban development and socio-political complexity.

Cities and towns with their large aggregated populations require the production of enough food for the town dwellers and citizens, including the important class of specialists who may not have enough time to devote to agriculture. In the middle Limpopo valley and lower reaches of the Shashe River, agro-pastoral settlements were located along river valleys and main floodplains which supported intensive production of cereals to feed the highly populated centres. Most Zimbabwe centres are located on productive land that afforded flexibility in resource exploitation.⁴⁵ Urban development on a global scale is associated with communities with a strong agricultural base. Without a secure food base, large nucleated communities cannot sustain themselves over extended periods. However, in southern Africa, large-scale food production was done beyond the city limits. The geographical setting of southern Africa's first city, Mapungubwe, was a rugged terrain and the bulk of its cereals came from its agricultural outposts on the rich floodplains of the Shashe and Limpopo rivers. Thus urbanism in southern Africa was a complex interplay between the urban centres and their rural hinterlands.

Environmental change and urban development: from Mapungubwe to Great Zimbabwe

Climatic reconstructions of southern Africa for the past 2000 years suggest that the period around AD 900 saw the onset of warmer and wetter conditions.⁴⁶ This period, lasting up to about AD 1300 and known as the Medieval Warm Epoch, created environmental conditions favourable for the maintenance of large herds of cattle as well as increased crop production. The period also coincides with the development of early state systems and urban development in the subcontinent. Based on modern observations, these states were located in an arid and occasionally tsetse-fly-infested area and yet they were able to support a considerable population of several thousand.⁴⁷ This can only imply better climatic conditions then as the large populations needed a favourable environment to sustain their agricultural activities. There is no doubt, however, that a more favourable climatic pattern than today would have supported successful agricultural pursuits and the accumulation of wealth. This ensured higher or surplus agricultural output to support the increased population. The growth in the local economies in the form of increased agricultural output is linked to the environmental explanation for the development of complexity in the region. While a favourable climate provided for agricultural success and helped to support large populations, ideological changes within the society were necessary for socio-political transformations.

45 Garlake 1978; Sinclair 1987; Sinclair & Lundmark 1984; Manyanga 2007.

46 Huffman 1996, 2008; Sinclair *et al.* 2003; Holmgren *et al.* 2003; Norström *et al.* 2005; Holmgren & Öberg 2006.

47 Maggs 1986, 40.

However, an understanding of these ideological processes calls for more theory as well as convincing ethnographic inferences from existing archaeological data.

The deteriorating environmental conditions associated with the Little Ice Age⁴⁸ in southern Africa after AD 1200 have been used as an explanation for the shift in settlements to the Zimbabwean plateau, eastern and central Botswana, and northern South Africa.⁴⁹ However, results of recent archaeological research in southern Zimbabwe and eastern Botswana make this linear link between the collapse of Mapungubwe and the subsequent growth of Great Zimbabwe unlikely. The accumulated archaeological data from the Shashe-Limpopo basin show that developments associated with higher levels of social and political developments were widespread in the region. The geographical space between Mapungubwe and Great Zimbabwe has evidence for pre-Mapungubwe, Mapungubwe, Great Zimbabwe and post-Great Zimbabwe phase sites. Thirty kilometres northwest of the Shashe-Limpopo confluence, Garlake⁵⁰ noted pre-Mapugubwe and post-Mapungubwe developments at Mapela while Manyanga⁵¹ noted similar developments around the Mateke Hills at Malumba and Mwenezi Farm. Developments akin to socio-political complexity have been noted in much of southern Zimbabwe during the 2nd millennium AD.⁵² A similar pattern has been confirmed on the South African side of the Limpopo River stretching from Schroda, Bambandyanalo and Mapungubwe to the west.⁵³ Similar patterns have been noted in eastern Botswana, with the Thune, Letsibogo and Motloutse clusters of sites demonstrating clear representation of hunter-gatherer occupation, hunter-gatherer farmer contact, and agro-pastoral communities of the first and second millennia AD.⁵⁴ While the detailed sequence is still being studied,⁵⁵ it is time scholarship on urbanism and socio-political complexity in southern Africa reconsider the possibility of these places not only as benefactors of the possible “climatic demise” of Mapungubwe, but also as centres that developed independently. In fact the environmental model has been put to question by its own proponents who are suggesting that the abandonment of Mapungubwe around 1290 needs to be explained in political terms rather than the environmental collapse model in the light of new cultural and isotope studies that seem to suggest that, on the contrary, climate remained wet until about AD 1400.⁵⁶ It is our contention that the increased research coverage in southern Africa in the past decade demands that explanations for the developments associated with socio-political complexity and urbanism need to go beyond Bambandyanalo and Mapungubwe as it is clear that these developments were closely related and widespread in southern Africa. Whether these settlement clusters represent peer polities as currently suggested,⁵⁷ awaits further archaeological and anthropological investigations.

48 Bryson & Bryson 1997; Tyson 1986, 1993; Tyson & Lindsey 1992; Huffman 1996; Holmgren *et al.* 2003; Smith 2005; Norström & Holmgren 2005; Holmgren & Öberg 2006.

49 Manyanga 2007.

50 Garlake 1968.

51 Manyanga 2001.

52 von Sicard 1955, 1957, 1961; Zachrisson 1978.

53 Huffman 2000; Calabrese 2005.

54 Campbell *et al.* 1996; Kinahan 2000; Manyanga 2005; Mooketsi 2009; Mothulatshipi 2008.

55 Vogel 2000.

56 Smith 2005; Huffman 2008.

57 Huffman 2000.

Space, architecture, ideology and power in pre-European urbanscapes in southern Africa

One way of locating meaning in urban settlement clusters is by focusing on the internal developments of such places. A number of studies have explored the use and meaning of space at Great Zimbabwe.⁵⁸ These studies are limited in the sense that they assume that towns like Great Zimbabwe were pre-designed, built and then occupied. The interconnectedness between Great Zimbabwe and its hinterland, already noted to be a key aspect of these pre-European urban centres, is hardly considered.⁵⁹

With considerable developments in Geographical Information Systems (GIS),⁶⁰ a possibility lies in testing space syntax theory and methodology⁶¹ to describe and measure the spatial layout of urban space, especially integration and connectivity at Mapungubwe and Great Zimbabwe. Proponents of structuralist approaches towards the understanding of the meaning of space at such sites would test existing data based on the assumption that there is an intelligible structure to the built environment as perceived and explored by users moving through space.⁶² The relevance to urban studies in archaeology lies in locating the relationships between space and society in the past.

Our conceptualization of space syntax in understanding urbanism in pre-colonial southern Africa goes beyond the city limits. As has already been noted, the urban-rural divide of pre-European urban centres in southern Africa was characterized by high integration and connectivity. In the process, both city and rural residents reflect landmarks and nodes on their shared landscape and this contributes towards their legibility (intelligibility) and navigation of the urban environment and neighbourhoods.⁶³ How easily one can reach a certain part of the city and its hinterland is a measure of syntactical accessibility, and connectivity is a measurement that takes into account relationships between a given space and other spaces immediately adjacent to it. Some spaces have higher connectivity values than others, giving people more access and choices in regulating their activities. We speculate at this stage that this is how the urban-hinterland model may have functioned in southern Africa in the past. The integration and connectivity between the urban centres and the rural hinterland was critical. The high level of interaction and dependency between these different spaces sustained pre-European urbanism in southern Africa. This leaves unexplored the subjects of architecture and ideology and how these are manifested in power relations.

We may have read too much of Great Zimbabwe architecture from the “exterior” to understand what was going on inside the buildings.⁶⁴ The constructed Great Zimbabwe architecture may have been pernicious in terms of the demands it placed on the economy and resources, and the welfare of its citizens. Perhaps what we see now is an aggregate of power play and ideology of its inhabitants. We pose the question: what can sites such as Great Zimbabwe, Khami and other

58 Eg. Huffman 1996, 2005, 2007.

59 See critique in Beach 1998; Chirikure & Pikirayi 2008.

60 Lock 2000; Wheatley & Gillings 2002.

61 Long *et al.* 2007.

62 Peponis 2008.

63 Kim & Penn 2004; Long *et al.* 2007.

64 Huffman 1996.

stone walled sites on the Zimbabwe plateau and adjacent regions tell us about the minds of their inhabitants, the people who erected them?

Architecture is a powerful form of expression, especially among the ruling class, who can also exploit it for purposes of ideology. Political power within the Zimbabwe Culture was ideological, and this is manifest in the stone architecture which expresses domination and control of nature, resources and humans. In this context, the urban landscape therefore becomes a powerscape, where power is projected through the built environment, the matrix of our physical being. According to Hassan⁶⁵, the urban space is the social body, linked with “identity” and “being-in-the world”. Urban architecture projects the social modalities of dominance, control, grandeur, affluence and splendour. The stone walls of Great Zimbabwe are an extension of the natural boulders found around the site. The architects of the town seem to have built the town by appropriating parts of nature. In this way, according to Hassan,⁶⁶ towns and cities project power through the exaggerated dimensions of architectural constructions, the utilizations of exotic and durable materials, and sophisticated designs reaching imaginatively beyond the realm of the ordinary. Cities and towns also project power by subjugating and appropriating nature, and by extension the very hinterlands they depend on.

The propositions made above call for the need to define patterns of communication followed by the inhabitants of Mapungubwe and Great Zimbabwe. Such patterns present the levels of aggregation/integration or disaggregation/disintegration between the various parts of the settlements. The problem with current interpretations of space lies in the application of graph-theoretic models assuming pre-designed urban layouts. How such towns and cities develop over a period of time and succumb to other economic, social and political pressures is poorly accommodated in the model.

Conceptualizing ‘decline’ of complex societies and urban formations in southern Africa

Decline or collapse in a complex state system is seen as the reversal of those attributes that characterize such systems. Tainter⁶⁷ defines a collapsed state system as one that demonstrates a rapid and significant loss of established level of socio-political complexity. Archaeologically, the evidence for the collapse of complex systems has been explained in terms of cultural or material discontinuity.⁶⁸ Other observable attributes of collapsing state systems are thought to be manifested through a lower degree of stratification, less economic and occupational specialization, and lack of economic and political control. Pikirayi notes that the archaeological explanation for perceived collapses of complex state systems has been

65 Hassan 2003.

66 Hassan 2003.

67 Tainter 1988, 4.

68 Pikirayi 1993.

simplistic.⁶⁹ Rather, the process of decline in such a complex system is likely to take various forms which do not necessarily lead to collapse.⁷⁰

If collapse is the reason archaeologists give for the abandonment of the middle Limpopo valley, it begs the explanation why people continued to occupy the area until recent times. Discounting environmental models for the collapse of state systems, Gunderson noted that the answer lies in such socio-ecological systems being able to maintain themselves in the face of perturbations and change.⁷¹ Inherent in these systems of nature and people is resilience which ensures that the system remains viable in the face of instability.⁷² Collapse is further avoided due to human creativity and innovation. Growth and success, as was the case in the middle Limpopo valley for much of the 12th and 13th centuries, may have made the system vulnerable, leading to decline or reversal of growth. The increased population observable in the archaeological record in the 12th and 13th centuries in the middle Limpopo valley may have exerted considerable demands on the floodplains, drylands, and the circumscribed zones. However, the stability domains in the past were so large that external disturbances had to be so extreme and persistent before the system flipped into another state.⁷³ Rather, societies went through a process of success and general decline, which may have seen institutions like leadership transforming and manifesting themselves in different forms. The abandonment of Mapungubwe possibly reflects a shift in political authority that used to be exercised in the valley in relation to another place in the further beyond the valley and floodplain. The subsequent elite residences represented by the Zimbabwe period settlements, Khami and historical Venda, might represent transformations in leadership and ideology.

The size of some of these early urban centres in southern Africa shows that large populations lived in them. One wonders how issues of energy procurement, resources, hygiene and sanitation were handled. Early cities in southern African do not show evidence of public works like sewage and water reticulation. While fresh water may have been collected from nearby rivers, streams and springs, one still wonders how waste disposal was handled at such crowded places. Could the abandonment of the main settlements at Great Zimbabwe and Mapungubwe reflect such tipping points from an environmental point of view? Oral traditions that posit a critical shortage of salt as the reason for the abandonment of Great Zimbabwe for areas to the north and to the west are clearly situated in both the economic and environmental paradigm.⁷⁴ New data seem to suggest that Mapungubwe was abandoned due to some factors other than environmental deterioration since the region was witnessing increased precipitation at the time.⁷⁵ The role of sanitation and hygiene, and water supply in an arid environment in which such nucleated towns and cities were based, needs to be considered in more detail. Perhaps an increase in the flood regimes of the Shashe and Limpopo rivers may have negatively impacted on agricultural production and human settlement

69 Pikirayi 1993.

70 Pikirayi 2006.

71 Gunderson 2000.

72 Fairhead & Leach 1996; Carpenter 2002; Berkes *et al.* 2003; Folke *et al.* 2003; Holling 2003; Redman & Kinzig 2003; Westley *et al.* 2003.

73 Holling *et al.* 2002, 15; Beach 1980.

74 Pikirayi 2001.

75 Smith 2005.

activity. This, however, needs more research in order to make sense of abandonment of a region during times perceived as 'normal' in climatic terms.

The whole debate on collapse/decline of pre-colonial urbanism is linked not only to environmental degradation but also to changes in the dynamics of politics. History is full of examples where authority shifted purely for political reasons. A case in point is the collapse of Khami/Torwa state in the 18th century and the subsequent rise of Changamire Rozvi state in central south-western Zimbabwe. The continuously weakening Mutapa state during the 17th and 18th centuries was a result of local strife and the frequent meddling by the Portuguese in the internal affairs of the state.⁷⁶ These later developments among the successor states of Mapungubwe and Great Zimbabwe show that environmental models were not necessarily key to the decline/collapse of southern Africa's early urban and state centres.

Cities and towns were not abandoned completely, but continued to be inhabited and used.⁷⁷ Urbanism was characterized by changing land-use zoning, with earlier settlements associated with the earliest known lineage, changing from predominantly residential places to sacred and religious ones. In this context, we learn about another aspect of the urban mind in southern Africa, namely reconnections to a place that had been abandoned in earlier times. To give an example, the hill complex at Great Zimbabwe was the earliest part of the town. Its reference as the religious centre in modern interpretation reflects its changing use from the residential area of the founding royal ancestors to one where major religious activities were conducted by subsequent communities. This respect for the founding ancestors was preserved and sustained by the spirit mediums.⁷⁸ In this case any leader became the real link between the founding ancestor and the new generation.⁷⁹ When Mapungubwe and Great Zimbabwe were first reported to the outside world in the 19th century, the sacredness and religious value of these sites were emphasized. However, this was quickly dismissed by scholars who saw a disjuncture with the archaeological past. This does not denote these places as religious centres from their inception, but a secondary use that ensured respect and protection of the ancestral places (*matongo*).

Conclusions and future directions

This chapter challenges the existing explanation for urban development in southern Africa and emphasizes the connectedness between the urban centre and its rural hinterland. The urban dweller in pre-colonial southern Africa appears to have had a permanent interest and possibly additional dwellings in the countryside where important subsistence activities took place. At both Mapungubwe and Great Zimbabwe, cattle, cereals, gold and other utilitarian metals were all extracted away from the major urban centres. Our knowledge of pre-European cities in southern Africa will only become complete when there is a balance in research between the work done in the urban centres and the hinterlands. Since urban development is perceived here as having developed in stages, any studies on the use of space need to consider change over time. Linear models linking

76 Mudenge 1988.

77 Summers 1960; Sinclair *et al.* 1993.

78 Mufuka 1983.

79 Mufuka 1983.

Mapungubwe to Great Zimbabwe must be revisited in consideration of new data emanating from the broader southern African region that shows that the process of development of socio-political complexity and urbanism was much broader than currently thought. Key to understanding urbanism in southern Africa is the consolidation of various data sets and the adoption of appropriate methodological and analytical tools that allow for the elucidation of time, space, social and economic issues that relate to the broader urban ecology of southern Africa. The linear evolutionary model that sees all developments as emanating from the environmental misfortune of communities near the Shashe-Limpopo confluence is being challenged by the new data sets from southern Zimbabwe and eastern Botswana.

We do not conceptualize a situation where state and urban formation collapsed, but rather, transformed into other settings. The resilient model provides an explanation for the continued use and transformation of societies in a highly sensitive, apparently marginal, environmental setting. We propose that future research consider the use of space syntax to determine whether the abandonment of such places as Mapungubwe and Great Zimbabwe were not in response to constraints such as water shortages, sanitation and hygiene which such nucleated areas may have faced. Space syntax would also test the comparability of the spatial layout at Mapungubwe and Great Zimbabwe. We also highlight the changing uses of urban archaeological sites from residential to religious and sacred, that with time, emphasize the importance of the founding ancestor.

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25. Towards an Archaeology of the Future: the Urban Mind, Energy Regimes and Long-term Settlement System Dynamics on the Zimbabwe Plateau

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ABSTRACT

The background to the development of urbanism on the Zimbabwe plateau is analysed in terms of multi-scalar regional and landscape perspectives using GIS (Geographical Information Systems). Urbanism is conceptualized as a cognitive phenomenon, the urban mind, and viewed in terms of deep time interactions between ideology and governance, local and inter-regional production and exchange systems and resource availability, as well as responses to the effects of climate change. In addition to the dynamics within the farming communities of the last 2000 years, consideration is given to mid-Holocene hunter-forager settlement systems previously excluded from discussion of settlement aggregation. Specific attention is given to changes and continuities in settlement preference in relation to soils as well as variability in temperature and precipitation. Crucial challenges of integrating the archaeological and paleoenvironmental record into discourse on sustainable urban development are raised as priorities for future research.

Introduction

There is a widespread and well-founded perception of archaeology as a means of obtaining or recovering knowledge about the past. The main focus of the discipline for the last 150 years has been, and remains, the understanding of material culture in all of its forms anywhere in the world. Public interest in the past is fed by the media in a variety of ways. Feature films ranging from the fanciful adventures of Indiana Jones to the titillatingly gruesome exoticism of Agatha Christie, who was once married to Max Malowan, a famous British archaeologist in Mesopotamia, attract mass audiences. In the academic field, much more serious scientific documentaries, books, articles and museum displays all attempt to cater for

a perceived public and scholarly interest in the past. The political dimension of archaeology is always present whether expressed through archaeologists engaging in global discourse, correcting perceived injustices, fulfilling nationalist agendas, or participating in “pure science” or indeed more commercially oriented salvage and tourist industry heritage studies.

Uppsala University has participated in international archaeology throughout the 20th century. In Africa we have, for instance, engaged in the Scandinavian Joint Expedition to Nubia in the 1960s¹ and since the late 1970s in a series of bilateral support programmes with countries in eastern and southern Africa as well as South and Southeast Asia and Latin America funded by Sida/SAREC. These projects included the Urban Origins in Eastern Africa programme for capacity building (with more than 20 African PhD candidates being supported)² and the Urban Origins Follow Up programme in which knowledge gained was recycled back into the societies in which it was produced in the form of museum displays and cultural centres, documentary films, school books, adult education and literacy programmes.³ In “greening” these contributions the Human Responses and Contributions to Environmental Change in Eastern Africa and Sri Lanka programme linked more than 50 professionals from 11 countries to carry out joint fieldwork and to address issues of climate change, settlement dynamics and resource usage throughout the region.⁴ Current contributions from past and present members of the African Archaeology Network continue this work, with further significant contributions from African archaeologists.⁵

Beginning in the 1990s discussions initiated by the United States Department of Agriculture/Forest Service and the Clinton/Gore global heritage policy formulation group considered the possibilities of applying GIS analysis to archaeological data from different periods with regard to settlement systems, environmental variables and climate modelling on a global scale.⁶ Part of the understanding reached was the need to use methods and data sets which are readily available anywhere in the world and this has been followed here. What is presented in this chapter is an example of analysis using available archaeological data sets and environmental coverages⁷ (see *Figs. 1–6*). Similar materials are possible to obtain from anywhere in the world given modest funding, and such plans are currently being formulated with colleagues from other regions working together in the IHOPE initiative.⁸

For present purposes the standard physiographic divisions of the Zimbabwe plateau will be used as an environmental framework for analysis⁹ while understanding that the broader connections of different urban settlement and trading systems can and do overstep these boundaries. The time frame under discussion is the Holocene (approx. 10000 years) and the last 200 of the Anthropocene.¹⁰ As will be illustrated below and elsewhere in this volume the Zimbabwe plateau has seen the development of an intertwined variety of life-ways and forms of symbol-

1 Säve-Söderbergh 1971/2.

2 Sinclair 1989, 1993.

3 See overviews and references in Sinclair 1997, forthcoming.

4 Sinclair 1997, forthcoming.

5 Chami *et al.* 2001; Kinahan & Kinahan 2006.

6 Gore 1992.

7 A technical term referring to a layer of digital data in a GIS analytical frame.

8 Costanza *et al.* 2007b.

9 Vincent *et al.* 1960.

10 Costanza *et al.* 2007b.

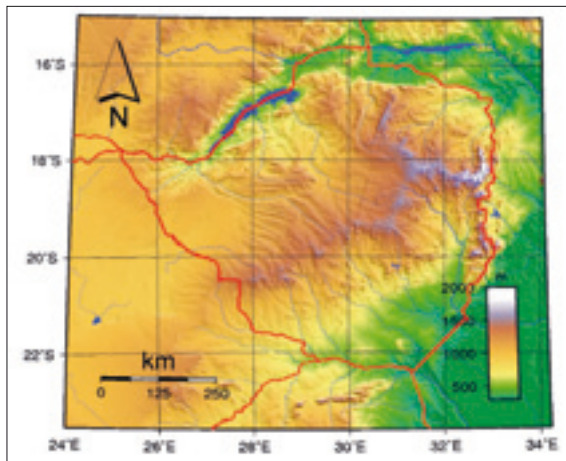


Figure 1. The Zimbabwe plateau: elevation. http://upload.wikimedia.org/wikipedia/commons/4/48/Zimbabwe_Topography.png

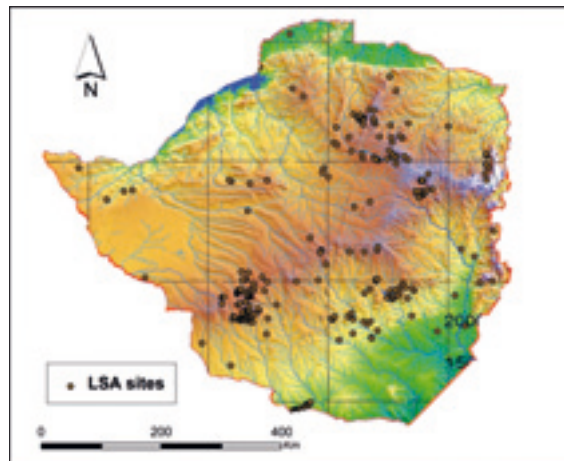


Figure 2. Holocene Hunter Forager sites.

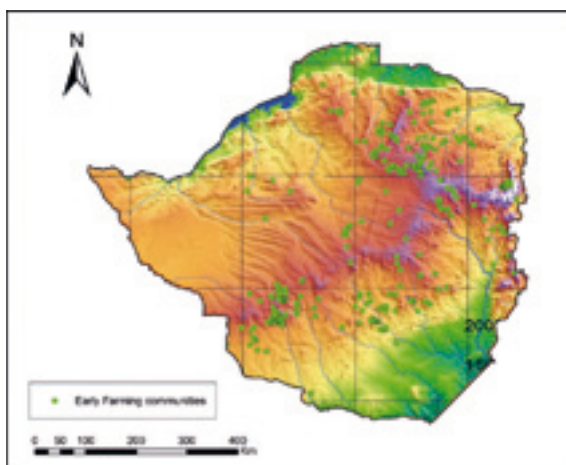


Figure 3. Early Farming Community sites of the first millennium AD.

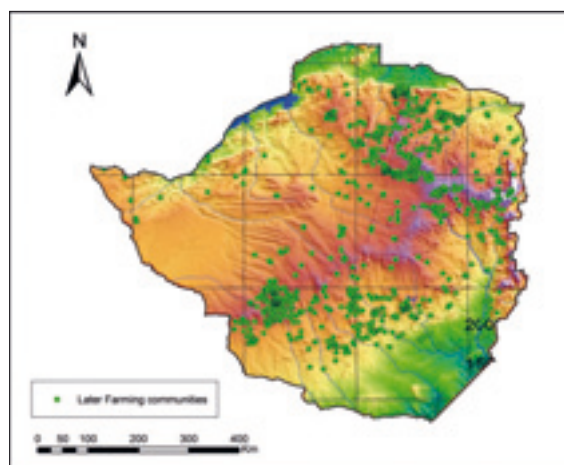


Figure 4. Later Farming Community sites of the second millennium AD.

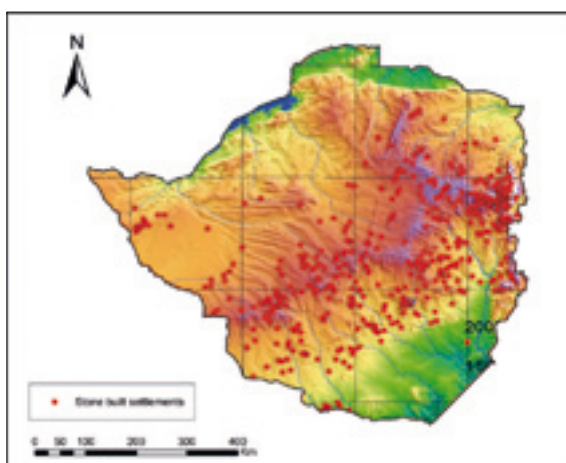


Figure 5. Stone built settlements of the Zimbabwe and Nyanga traditions from c. 1200–1700 AD.

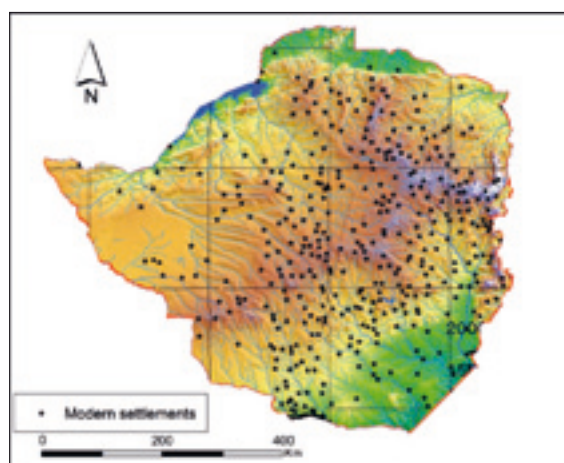
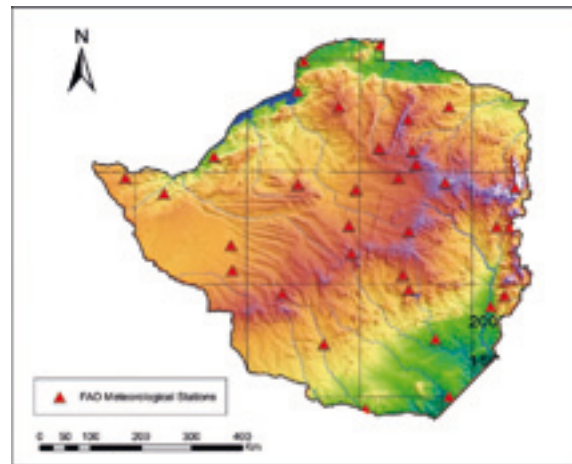


Figure 6. Modern settlements.

Figure 7. FAO Meteorological Stations used in the analysis.



ic expression in the hunter-forager, agriculturalist and industrial societies. This tripartite distinction of human settlement systems based on energy regimes¹¹ is currently being developed for a comparative analysis of settlement systems and urban complexes in different regions of Africa.¹²

Three major energy transformation regimes can be taken to characterize the basic metabolic organization of societies on the Zimbabwe plateau.¹³ Firstly, there was the hunter-forager regime with its direct appropriation of available resources enhanced by control of fire; secondly, the agricultural regime characterized by the transformation of solar energy through the incorporation of plants and animals into agricultural production systems which were eventually enhanced through the working of iron; and finally, the industrial regime involving the further transformation and expansion of the agricultural regime systems dependent upon the availability of fossil fuels. In many urban situations in Africa we are faced with a mosaic of interacting components of these regimes.

Significant environmental changes have occurred in the Holocene and the Anthropocene in southern Africa. In the last 30 years extensive programmes of paleoenvironmental reconstruction using different sources of evidence have resulted in rapid improvements of pre-existing regional millennial scale estimates to broad coverage at the century scale and in localised areas even decadal scales of a variety of parameters governing plant growth and resource availability and ecosystem services. A number of overviews used for assessing urban settlement system dynamics have been provided for southern Africa.¹⁴

In this chapter paleoenvironmental reconstructions of mean annual precipitation and temperature at 200 year averages by Bryson and Bryson¹⁵ are used to provide a spatial context for assessing the effects of environmental change on the settlement systems of the Zimbabwe plateau. The coverages were developed through application of the Bryson and Bryson approach to archaeo-climatological modelling using 30 year averages of climate data from 35 stations throughout Zimbabwe (Fig 7) and additional stations from other countries of southern Africa provided by the FAO/UNDP.¹⁶ The point pattern data were then interpolated using the Kriging option of ARCGIS by Markku Pyykönen and the present (see

11 See for example Allen *et al.* 1999, de Vries & Goudsblom 2003.

12 Sinclair forthcoming.

13 De Vries & Goudsblom 2003.

14 Tyson 1986; Tyson & Lindsay 1992; Scott 1982; Holmgren & Öberg 2006.

15 Bryson & Bryson 1997.

16 FAO 1984.

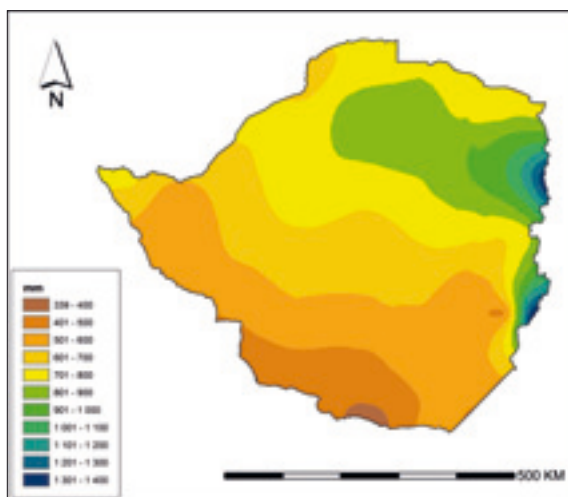


Figure 8. Mean annual precipitation today.

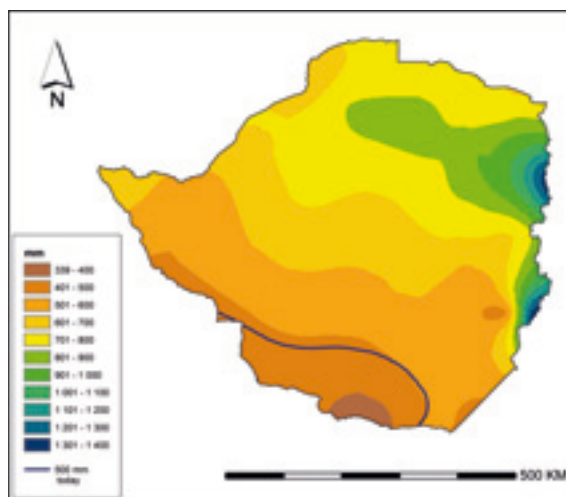


Figure 9. Mean annual precipitation c. 400 bp.

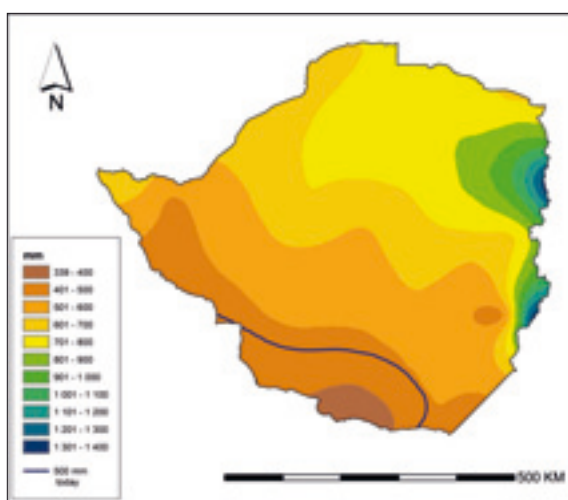


Figure 10. Mean annual precipitation c. 800 bp.

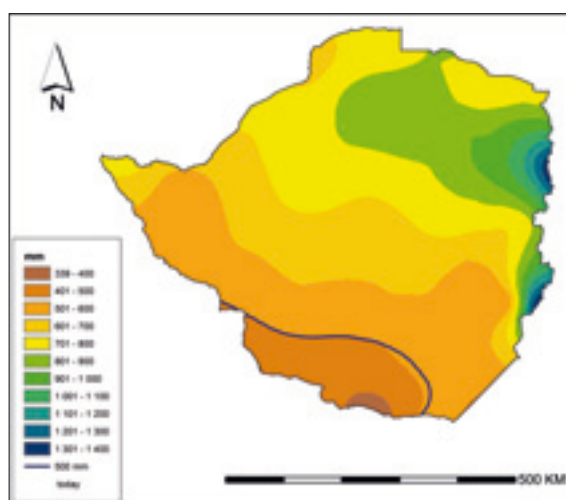


Figure 11. Mean annual precipitation c. 1200 bp.

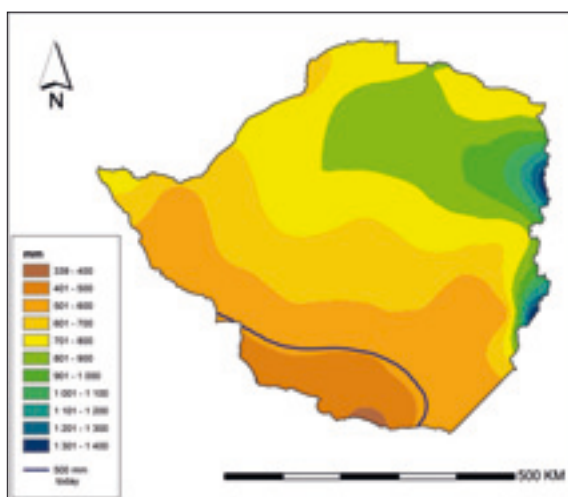


Figure 12. Mean annual precipitation c. 1600 bp.

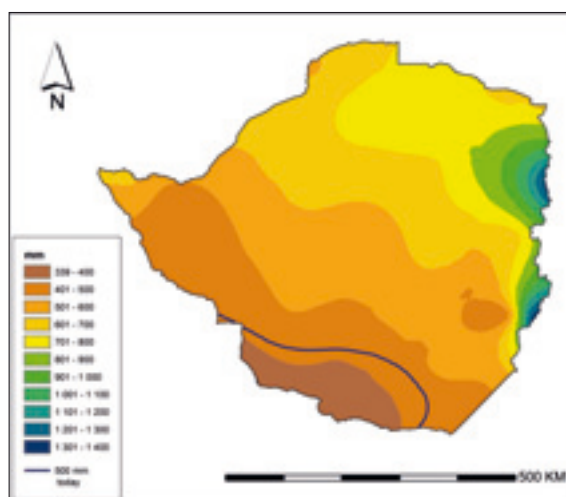


Figure 13. Mean annual precipitation c. 2000 bp.

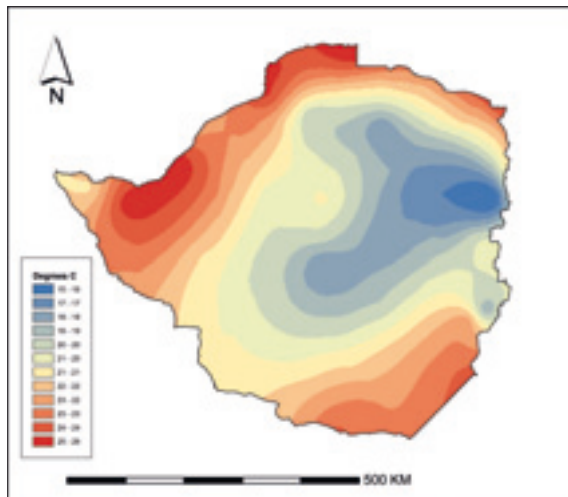


Figure 14. Mean annual Temperature today.

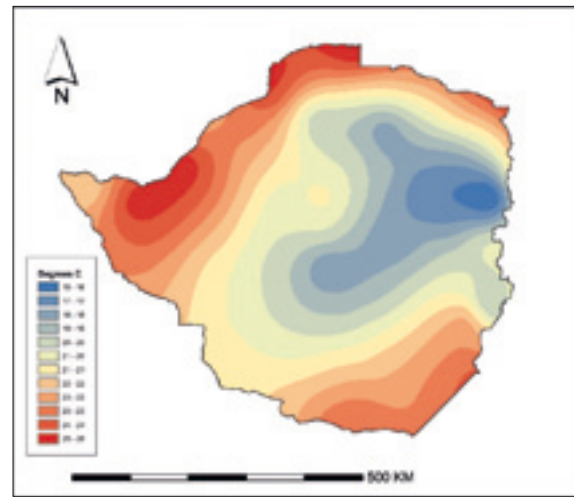


Figure 15. Mean annual Temperature. 400 bp.

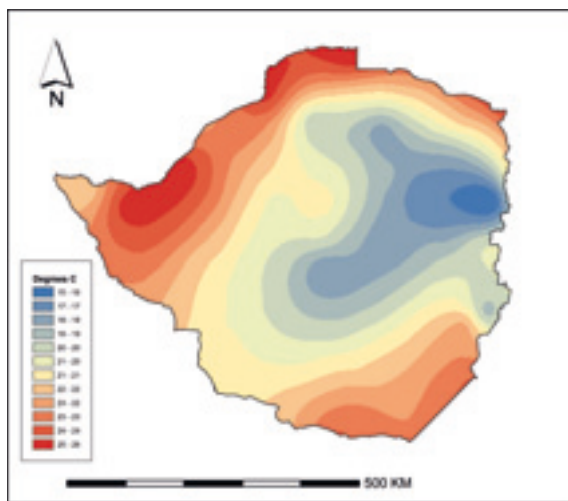


Figure 16. Mean annual Temperature c. 800 bp.

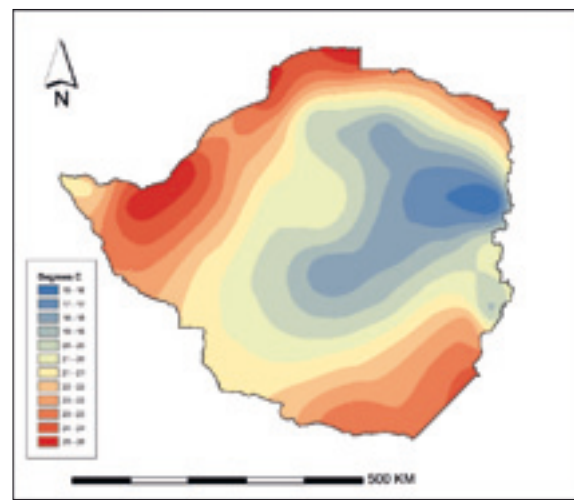


Figure 17. Mean annual Temperature c. 1200 bp.

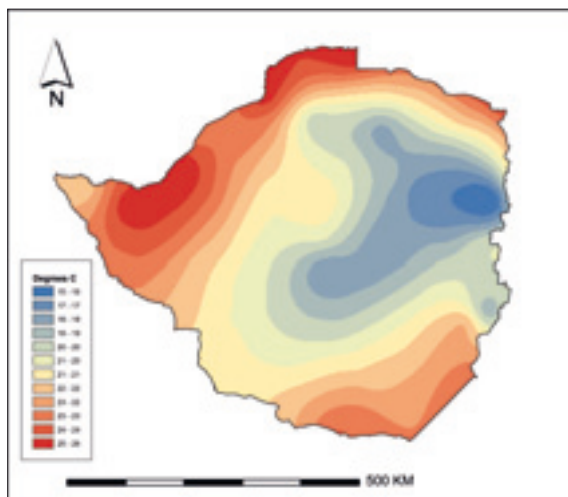


Figure 18. Mean annual Temperature c. 1600 bp.

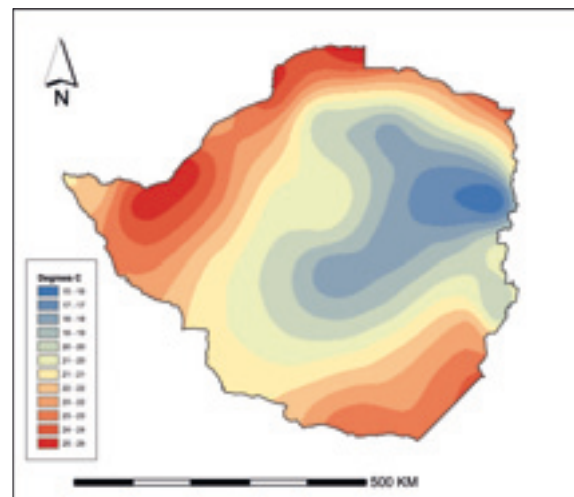


Figure 19. Mean annual Temperature c. 2000 bp.

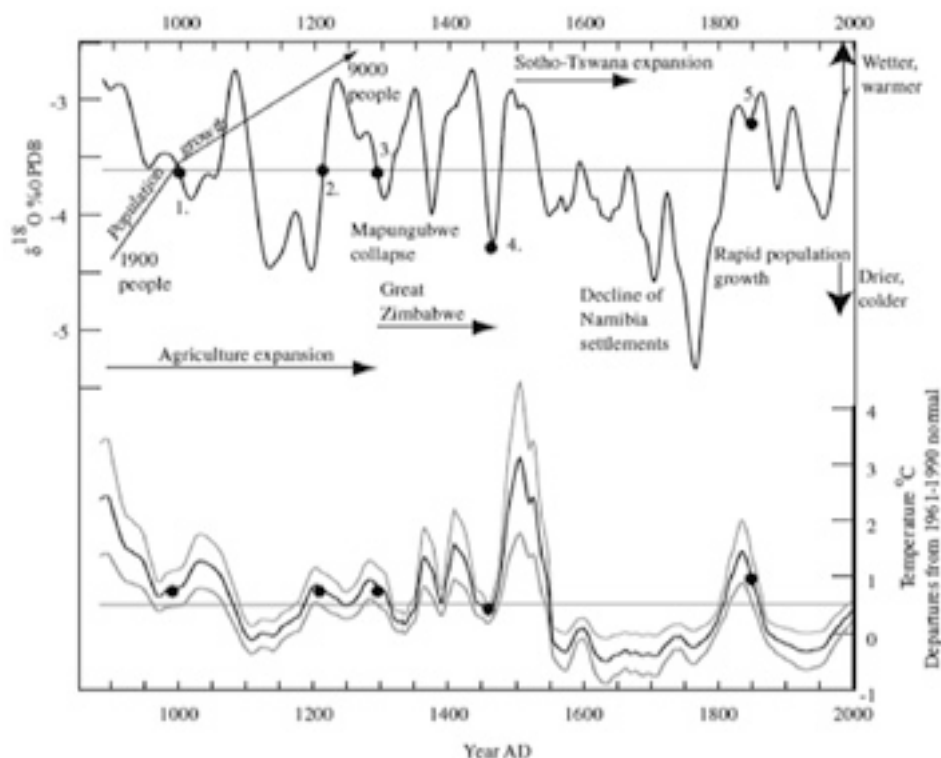


Figure 20. High-resolution Rainfall and Temperature variations from Cold Air Cave, northern South Africa after Holmgren and Öberg 2006.

Figs. 8–13 and Figs. 14–19). The effects of external forcing mechanisms of climate change upon urban development have been discussed especially with regard to a small number of high resolution speleothem data sources (obtained from sectioning stalagmites found in caves) in relation to archaeological data from the Shashe Limpopo basin on the southern plateau margin (Fig 20).¹⁷ Tree ring data have also been the subject of debate.¹⁸ There is a clear need for future research on the effects of climate change on settlement system shifts in southern Africa to focus on assessing the different proxy data sources together.

Leaving aside the lively debates on the effects of climate change upon human settlement systems, what has not been considered much are the effects of the centuries-long practice of iron smelting, charcoal burning and pottery firing upon the vegetation cover. Such changes can result in both albedo effects and increased emissions into the atmosphere which in turn may have significant effects on local and even regional climate patterns and ultimately conditions of urban growth, decline and even collapse.¹⁹ Despite early interest in the environmental effects of iron smelting in the Sudan²⁰ these processes are still not well enough understood.²¹ At the same time we must guard against projecting the deleterious effects of current industrial regime land use practices supported by profligate use of fossil fuels back into prehistoric times.²² The connections between climate change and urban system development are complex and at present best seen in a diachronic, long-term perspective. These issues are fundamental for assessing the long-term future sustainability of human life-ways and settlement systems

17 Jonsson 1998; Manyanga 2006; Huffman 2008, 2009.

18 Hall 1976; February & Stock 1998.

19 Ruddiman 2006; Tainter 2001.

20 By e.g. Haaland 1985.

21 Ruddiman 2006.

22 Stocker *et al.* 2010.

on the Zimbabwe plateau and should be the subject of detailed multidisciplinary research.

Archaeological approaches to African urbanism

Overviews of African urbanism are provided by a range of scholars including sociologists, geographers, historians and archaeologists.²³ Until the end of the 1970s, however, the archaeological contributions had a broadly cultural historical orientation. Despite the theoretical limitations the early research work resulted in the accumulation of a remarkable quantity of empirical time series settlement data which is still essential for current and indeed future understanding of African urbanism.

Quite considerable effort in world archaeology has been expended on defining “urban” as opposed to “rural” entities and contexts. Most well known is the checklist of attributes associated with states and by extension with urban societies by V. Gordon Childe²⁴ and recently reassessed by Smith.²⁵ Uncritical application of the list to the limited range of known remains of built environments in the initial stages of the development of African archaeology gave predictably few “jackpot” examples of the full range of Childean attributes leading to derogatory comparisons from an evolutionist perspective between Africa and other continents.²⁶ Efforts to obtain a more balanced appreciation of the origins of the urban settlements in southern Africa have a venerable history with remarkable early contributions on the Zimbabwe plateau²⁷ and in the Limpopo Valley.²⁸ Even so, it should be remembered that African archaeology, well known to be the child of colonialism, is not immune to bias.²⁹

From the 1990s until the present in African archaeology in general and more specifically in the treatment of urbanism, efforts have been made to improve theoretical rigor. New definitions of urbanism have guided research in different regions. In West Africa Bassey Andah, reacting against universalist approaches to urbanism, developed a more culturally specific set of urban criteria suitable for the West African Sudan, Sahel and Guinea regions including attributes such as centrally located shrines or mosques, palaces, markets, transportation stations and military infrastructure. In northeast Africa, Fattovitch in developing his detailed cultural historical approach to urbanism identifies towns and cities by the following features: a) size, reflecting a quite large and dense population; b) craft, commercial, administrative and cultural functions, pointing to a complex social organization; c) monumental buildings and/or intended plan, stressing the authority of a central power.³⁰ Similarly in west-central Africa de Maret identifies the central role for urban organization of symbolic power of kingship and ritual in

23 Hull 1976; Winters 1983; O'Connor 1983; as well as wide-ranging compilations, such as Shaw *et al.* 1993; Anderson & Rathbone 2000, and syntheses Connah 2001, 2005; Coquery Vidrovitch 2005; Sinclair forthcoming.

24 Childe 1950.

25 Smith 2009.

26 Clark 1962.

27 By Randall-McIver (1906), Caton Thompson (1931) and Kenyon (1931).

28 Fouche 1937.

29 Garlake 1973; Sinclair *et al.* 1993; Hall 1996.

30 Fattovitch 1999.

attracting large numbers of people. He not only points to the low density spread and short-lived duration of historical urban settlements but also to the clear continuity in form and layout with modern cities in west-central Africa.³¹

In the last ten years the ontological base of African archaeology and in particular linear evolutionism has been questioned, and this has involved the development of a post-colonial discourse on social complexity.³² In the urban field this is clearly apparent in increasingly sophisticated treatments of hierarchical and lateral (heterarchical) forms of organization in, for example, the inland Niger delta by Roderick McIntosh.³³ This approach, which has great potential for analysing the role in the settlement system of smaller settlements located away from the major centres, owes much to the theoretical discussion with Carole Crumley³⁴ and Joseph Tainter.³⁵ This mirrors development elsewhere of the concepts of eco-dynamics³⁶ and system dynamics³⁷ as well as resilience theory with its adaptive cycle.³⁸ Recent archaeological applications on urbanism in West Asia³⁹ identify a number of slow variables relating to demographic changes which operate on the macro-scale and are of interest for modelling urban systems elsewhere in Africa.

Applications of resilience theory in regard to African urbanism are still in process but Manyanga has pioneered a landscape-oriented application in the Mapungubwe region of the Shashe-Limpopo river basin.⁴⁰ Resilience (the capacity of a system to absorb shocks without changing its essential structure)⁴¹ can be modelled as a non-linear function of capital investment and connectedness.⁴² We are still some way from being able to model these interactions in African urban systems, and one particular limitation of the resilience applications so far is the difficulty of integrating cultural and symbolic values and learned behaviour into the modelling process of urbanism. Until recently these have focused upon issues of urban governance rather than metabolism,⁴³ and eco-system services and current research aims at contributing to the production of an integrated bio-social urban history.⁴⁴

Towards an operational concept of urbanism

Drawing upon the concepts outlined above, the approach taken to urbanism in this chapter is necessarily tentative. Quite simply the operational concepts have not yet been fully developed. The approach taken here acknowledges the need

31 De Maret 1999.

32 Keech McIntosh 2000; R. McIntosh 2005.

33 McIntosh 2005.

34 Crumley 1995.

35 McIntosh, Tainter & McIntosh 2000; Allen *et al.* 1999.

36 McGlade 1995.

37 Van der Leeuw 2000; Tainter 2000.

38 For example Gunderson & Holling 2002; Walker *et al.* 2006; Fisher, Brett Hill & Feinman, 2009.

39 Redman and Kinzig 2003; Van der Leeuw *et al.* 2009.

40 Manyanga 2006.

41 Gunderson & Holling 2002.

42 Walker *et al.* 2006.

43 Taken here as the processes which maintain a town.

44 Costanza *et al.* 2007a, b.

to provide a multi-scalar spatio-temporal framework for providing a deep time understanding of urbanism on the Zimbabwe plateau.

The analytical perspective should not be limited to the confines of the continent as the effects of distant action of the world systems active in the Indian Ocean trading networks as well as the continental trading systems linking the Zimbabwe plateau with the Central African interior and beyond also have to be taken into account.⁴⁵ A multi-scalar perspective underlines the need to broaden our view from the individual urban complex, for example Great Zimbabwe, to include the outlying settlements and other centres, even if, as seems likely, the available data provide only a partial view.⁴⁶ Further, nature and society must be integrated into our new approach to the development of urbanism. This entails not only taking into account the “external” forcing mechanisms of climate change and constraints upon society but also the potential effects of human actions, at least at the local and regional levels, in inducing these changes. These interactions which might entail different responses by urban societies to similar external perturbations are best understood from a diachronic long-term perspective combined with the inclusion as far as possible of a synchronic short-term appreciation of the differentiated forms of societal organization as well as the perceptions of individual actors.⁴⁷

The application of energy-based models using complexity theory makes it possible to understand and compare the transformation of small-scale settlements of mobile communities into large-scale agricultural settlements and also the transformation of some of these smaller settlements into urban settlements and cities. Such generalizations must not blind us, however, to the rich mosaic of unique and idiosyncratic cultural variability manifested in urban settlement systems throughout Africa. These have been described in great empirical detail by sociologists, historians and archaeologists,⁴⁸ and it is this cultural diversity which underpins the individual decisions to proceed upon the path towards urban transition and also the daily decisions which are needed to sustain it. Urban metabolism is not merely a question of physical-chemical interactions and unconscious energy flows. Rather, it represents the cumulative response to a series of decisions taken by individual actors influenced by learned behaviour and symbolic projections as well as socio-economic and political demands.⁴⁹ These cognitive dimensions of the urban mind permeate all of these interactions.

Settlement dynamics on the Zimbabwe plateau: A case study

The Zimbabwe plateau has seen more than 100 years of professional archaeological research input beginning with Randal McIver and Caton-Thompson, and

45 See for example Beaujard 2005; Pikirayi 2001.

46 See discussion in Sinclair 1987; Pikirayi 1999, 2001; Pwiti 1997; Manyanga 2006; Katsamudanga 2009.

47 Sinclair & Lundmark 1984; Sinclair 1987.

48 See overviews in Connah 2005; Coquery Vidrovitch 2005.

49 See Barthel *et al.* this volume.

much of it aimed at understanding the more than 800 stone buildings distributed across the plateau and surrounding areas.⁵⁰

Since the late 1940s first the Southern Rhodesian and later the Zimbabwean Museums service has compiled data on archaeological site distributions. The original mapping approach was modelled on that of the Swedish Antiquities Service after a visit to Stockholm in 1955 by Summers.⁵¹ The distributions have, among other things, been used to provide an overview for a path-breaking cultural-environmental assessment by Summers in 1960⁵² as well as a series of later spatial analysis applications.⁵³ To offset any perceived bias it should also be pointed out that there have also been significant developments of spatial analysis applications in surrounding countries, for instance in Botswana.⁵⁴

Selections of the Zimbabwean survey data converted into ARC GIS 9.1 coverages are shown here in relation to topography in Fig. 2–5

The time series data derived from the archaeological survey of Zimbabwe and presented above can be used in a number of ways particularly when integrated into a GIS analytical frame, and current approaches particularly to northern and eastern Zimbabwe are well summarized by Katsamudanga.⁵⁵ In order to obtain an overview of settlement dynamics for different periods the relationship between site location and soil type is used as an example (Figs. 21–25). The different time series data sets were intersected with the FAO soils map showing soil family and soil units using the intersect tool in ARC GIS 9.2. The results were tallied and converted to percentages. The total area of soils available was calculated by summing the area of the different soil units in Zimbabwe and converting to percentages. This provides a straightforward comparison of soil preferences for the different periods in relation to the total soil availability (see *Figs. 26 and 27*).

Hunter-forager regime settlement aggregation

Some unforeseen consequences of reorienting our views of urbanism within the categories of energy regime outlined above include further challenges to an evolutionist view of the development of urbanism by identifying significant settlement aggregations in hunter-forager societies which have not been previously recognized. Such a case is given in the Matobo Hills of southwest Zimbabwe where more than 400 mid-Holocene hunter-forager sites and artefact scatters have been recorded.⁵⁶ The overall representativity of the site distributions on the Zimbabwe plateau and surrounding areas is a matter of debate and essentially the coverages are most useful in the areas where sites are present. For the other areas with a paucity of sites, the lack of systematic survey especially in the lower lying regions can certainly pose problems. In the Matobo Hills, however, systematic field sur-

50 See overviews in Summers 1971; Garlake 1973; Sinclair 1987; Connah 2005; Hall 1996; and most recently Pikirayi 2001 who includes the Afro-Portuguese trading settlements on the northern plateau.

51 Summers pers. comm.

52 Summers 1960.

53 Garlake 1978; Sinclair 1987; Swan 1994, 2008; Pwiti 1996; Manyanga 2006; Katsamudanga 2009.

54 Denbow 1984; Lane *et al.* 1998; Huffman 2008; and see also Manyanga *et al.* this volume.

55 Katsamudanga 2009.

56 Walker 1995.

Fig 21 FAO Soils.

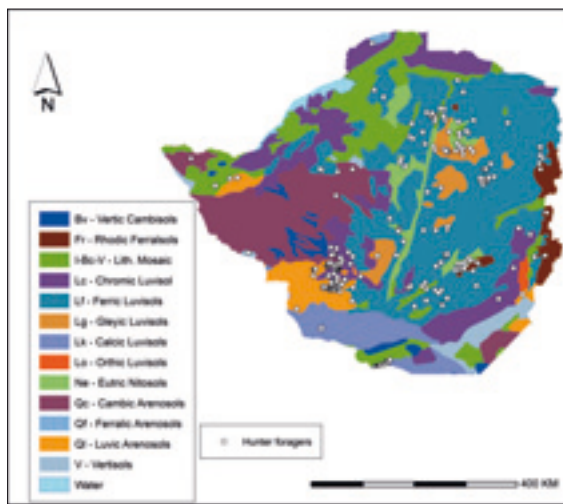
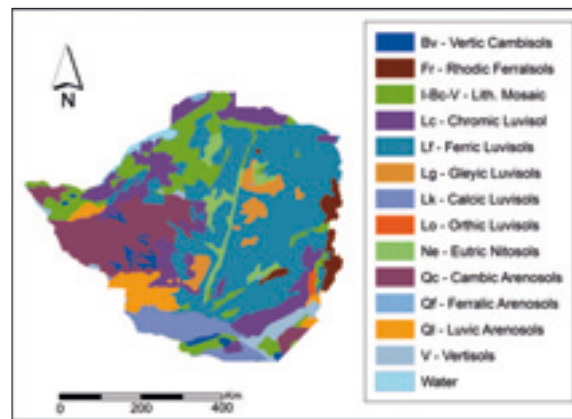


Figure 22. FAO Soils with Hunter Forager sites.

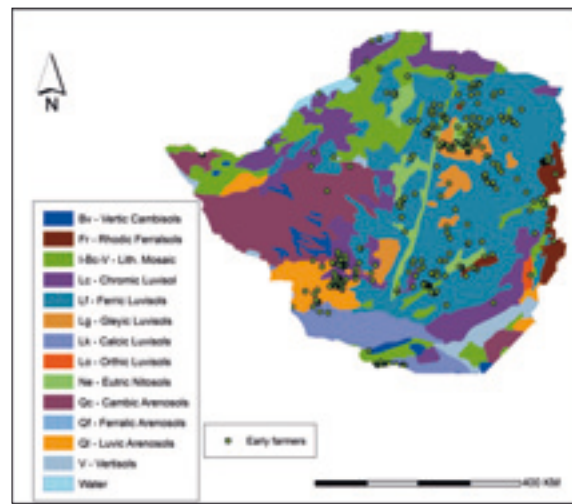


Figure 23. FAO Soils with Early Farming community sites.

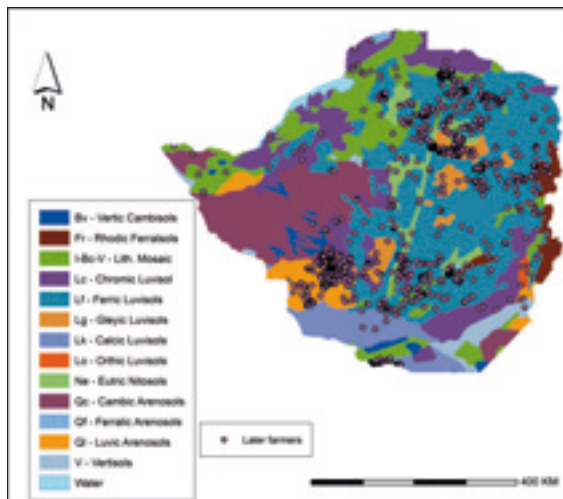


Figure 24. FAO Soils with Later Farming community sites.

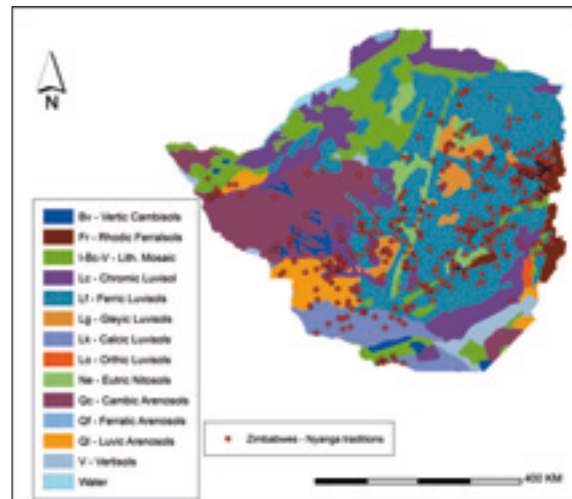


Figure 25. FAO Soils with stone built settlements of the Zimbabwe and Nyanga traditions.

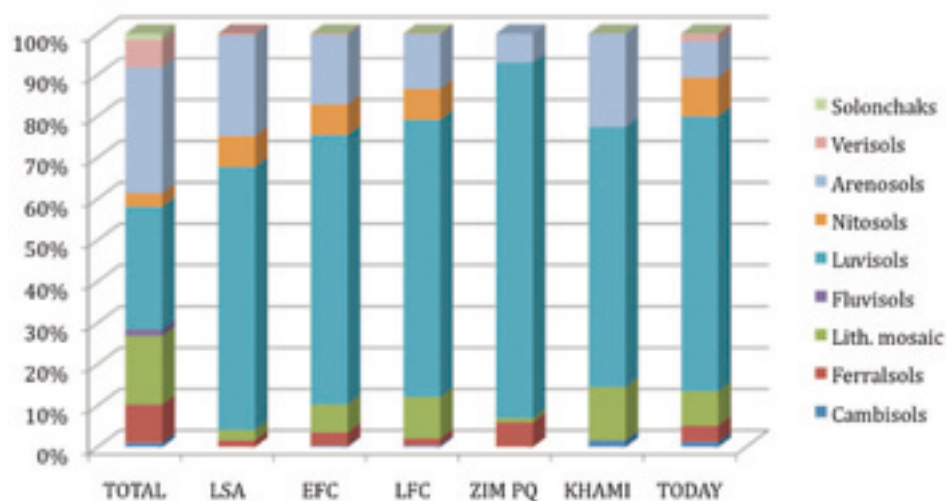


Figure 26. Overview of soil preferences by occupational phase on the Zimbabwe plateau.

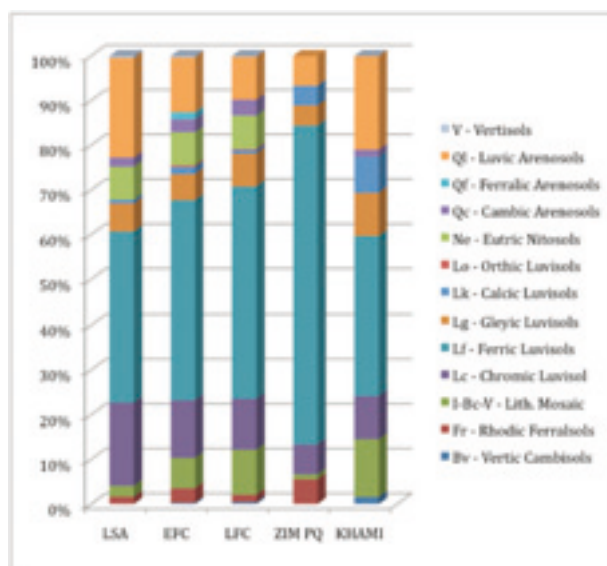


Figure 27. Details of soil preference analysis of occupational phases on the Zimbabwe plateau.

vey has been conducted for more than 50 years (Fig 28).⁵⁷ Major settlements are organized in a tight, regular, honeycomb lattice of long-term occupied dwelling sites approximately 2.5 km apart (Fig.29). Craft specialization as evidenced by highly localized stone tool technology traditions with specialized activity sites adds to the differentiated settlement pattern.⁵⁸ Further, the monumentality of the granite rock shelters and the natural standing boulders provide significant contexts for an extraordinary production of rock art in panels on the walls of the dwelling sites.⁵⁹

The concentration of dwelling sites in the Matobo Hills is considerably denser than in the surrounding region.⁶⁰ The overall known distribution of Hunter Forager Community sites (Fig. 22) favours the Ferric and Chromic Luvisols of the mid to higher areas of the plateau mirroring perhaps the Luvisols derivation from granite rock and their suitability for maintaining herds of grazing animals. The stable pattern of major dwelling sites apparently maintained throughout the mid-Holocene seems far removed from ethnographic examples of highly mobile

57 Walker 1995; Walker & Adams 1997.

58 Walker 1995.

59 Cooke 1969; Garlake 1987.

60 See for example Sinclair 1987: Map 1 and compare with Lane *et al.* 1998:73.

Figure 28. Hunter forager site distributions in the Matobo Hills. After Walker 1995.

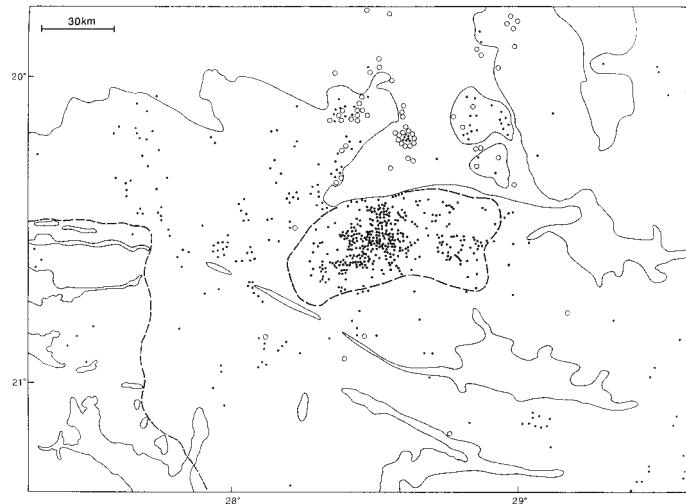
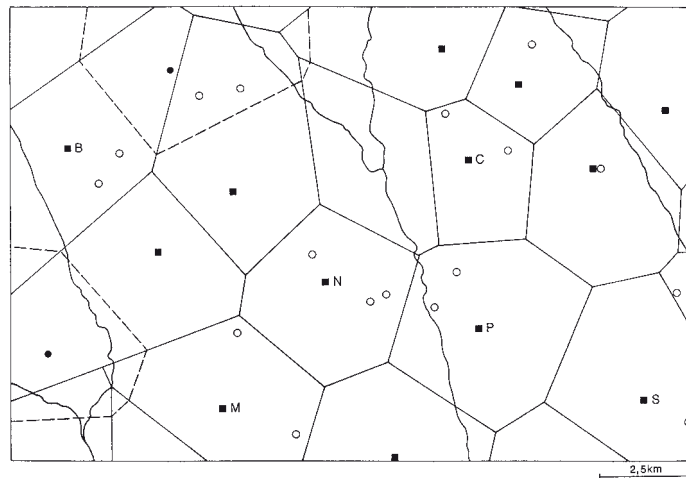


Figure 29. Major living sites in the Matobo Hills with Thiesson polygons. After Walker 1995.



(!) Kung hunter-gatherers in the Kalahari.⁶¹ Of course as so often in archaeology we are hampered by uncertainties in discerning whether or not occupations in different areas of an apparent settlement system are contemporaneous, but this example should suffice to remind us that Africa retains the potential to challenge facile evolutionist assumptions.

Agricultural regime settlement

The Zambesian tree savannah zones of south-central Africa bordering the thirlands of the Kalahari fringe and the Highveld summer rainfall regions of South Africa provide a varied interlocking set of environmental contexts. The region maintained agricultural settlement systems which share features of gross economic organization with cereal and root crop agriculture mixed with animal husbandry of small stock and cattle in areas suited for these occupations.

The coverage showing Early Farming Community (EFC) sites is broadly dated to the first millennium AD. The settlement pattern shows continuity in core settlement areas when compared to the Forager community site locations and

61 Lee & DeVore 1987.

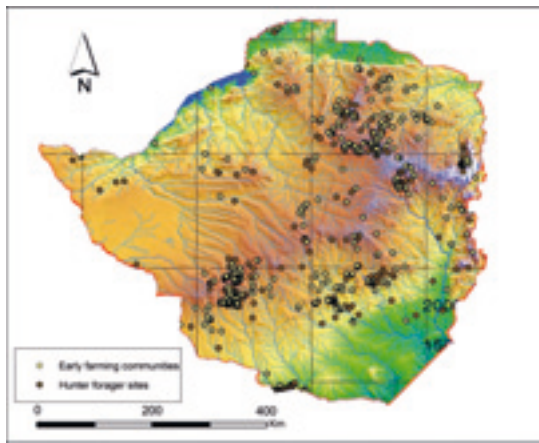


Figure 30. Hunter forager and Early Farming community site distributions.

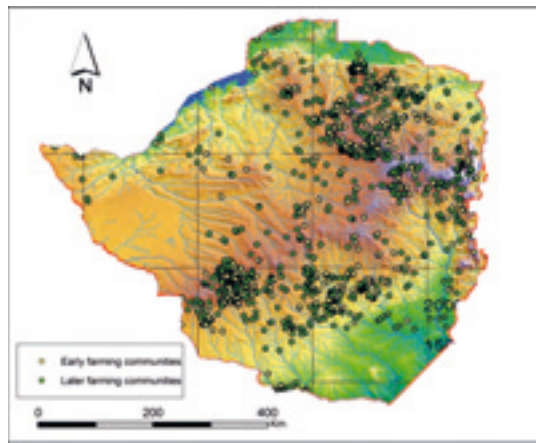


Figure 31. Early and Later Farming community site distributions.

but also an expansion outwards into new areas (*Fig. 30*). There is a continued focus on the Luvisols.

The Later Farming Communities (LFC), which are broadly dated to the second millennium AD, also show a focus upon the Luvisols and a further expansion of the settlement system to incorporate new areas (*Fig. 31*). An obvious source-critical issue appears here and it is not surprising that more recent sites are better represented. However the coverages can also be argued to be reasonably representative from a comparative perspective as professional surveyors well capable of identifying sites of both the early and the later farming communities were active throughout the plateau.

Research on the site distributions of the stone-built settlement across the plateau was pioneered by the environmental and geographical approach of Summers in 1960.⁶² In the 1980s inter-site analysis was extended throughout the plateau and 50 km clusters of serially occupied second tier stone settlements were identified.⁶³ These clusters supported political and economic structures of the Great Zimbabwe and the Torwa state centred to the west at Khami as well as the later capital at Danamombe. It is interesting to note that the invading Ndebele set up military urban settlements which preceded the European colonial settlement at Bulawayo in the buffer zones between the settlement clusters of the Torwa state.⁶⁴ The extension of the analytical frame to the eastern Kalahari fringe has added significant detailed knowledge of the settlement systems with their extensive cattle herds and trading contacts as far away as the Mozambique coast.⁶⁵

The coverage representing the stone-built settlement of the Zimbabwe and Nyanga traditions of the second millennium AD (*Fig. 5*) shows further expansion and incorporation of outlying areas into the settlement system as is shown clearly in the western plateau regions. Throughout the plateau transport constraints apply for limiting the supply of subsistence produce to urban dwellers, placing a premium upon near-lying fertile soils, and similar interaction and communication limits influence the size of urban settlement. The variation in mean

⁶² Summers 1960; Garlake 1976.

⁶³ Sinclair & Lundmark 1984; Sinclair 1987; Sinclair *et al.* 1993.

⁶⁴ Sinclair 1987.

⁶⁵ See Lane *et al.* 1998; Pikirayi 1997 for overviews.

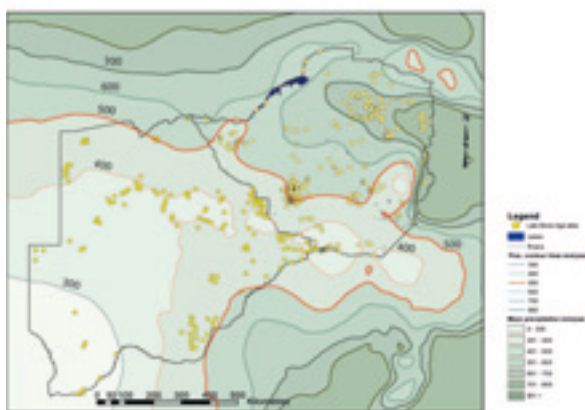


Figure 32. Hunter forager sites in Zimbabwe and Botswana and modelled mean annual precipitation c. 2000bp. (Botswana data after Lane et al 1998; data from South Africa excluded). Data visualization by Markku Pyykönen.

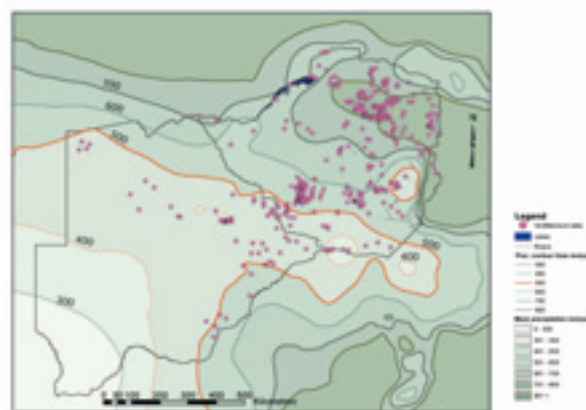


Figure 33. Early Farming community sites in Zimbabwe and Botswana with modelled mean annual precipitation c. 1800bp. (Botswana data after Lane et al 1998; data from South Africa excluded). Data visualization by Markku Pyykönen.

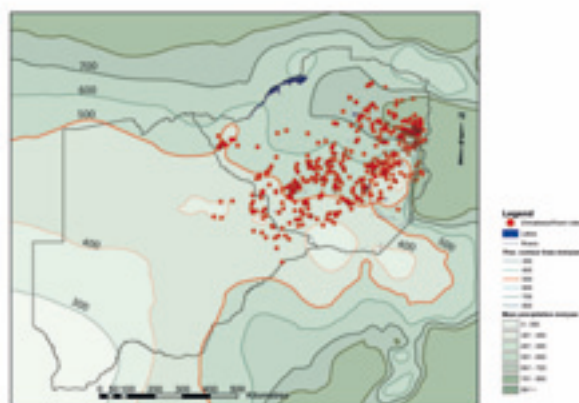


Figure 34. A selection of stone built settlements of the Zimbabwe and Nyanga traditions with modelled mean annual precipitation c. 800bp. Data visualization by Markku Pyykönen.

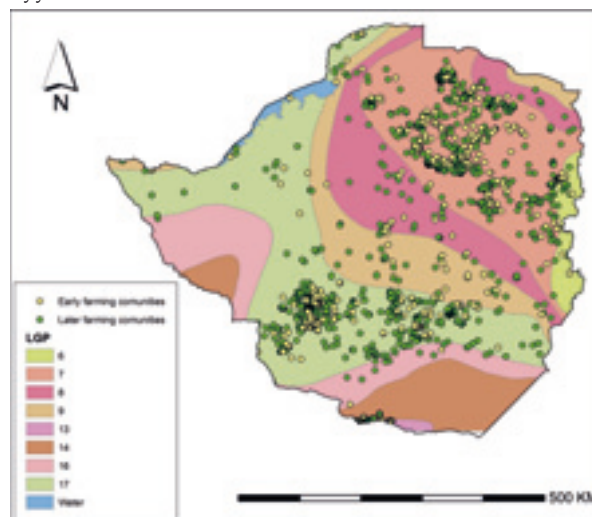


Figure 35. Early and Later Farming community sites with FAO Length of Growing Period.

annual precipitation can be seen (Figs. 32–34) to cross-cut the presently known settlement systems on the Zimbabwe plateau. Overall it seems the combination of soils and time series temperature data and precipitation data in an integrated agroecological perspective (Fig. 35) offers considerable potential for understanding the diachronic human environmental interactions on the Zimbabwe plateau.

The urban centre of Great Zimbabwe with its magnificent stone-walled enclosures dating from c. 13th–15th centuries AD has claimed perhaps more than its share of attention.⁶⁶ The town has been estimated at reaching a maximum extent of c. 650 ha including wetland areas likely to have been used for gardening.⁶⁷ It has been pointed out that it is possible and indeed likely that different areas were not all occupied at the same time.⁶⁸ Further, it is also possible that

66 Caton-Thompson 1932; Summers, Robinson & Witty 1961; Garlake 1973; Huffman 1972, 1977; Sinclair *et al.* 1993; Chirikure & Pikirayi 2008.

67 Sinclair *et al.* 1993.

68 Sinclair *et al.* 1993.

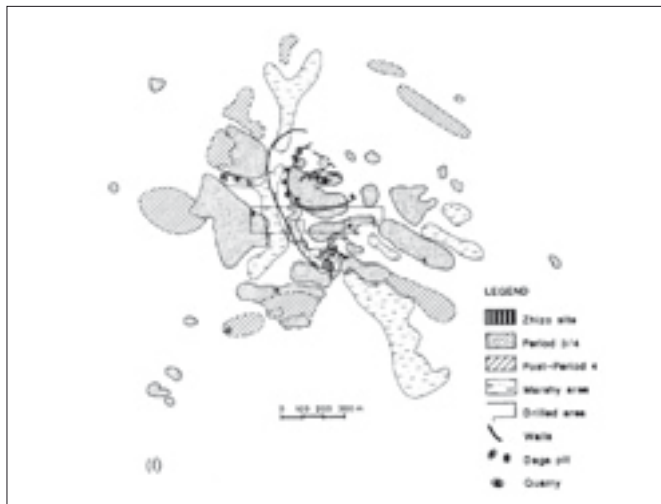


Figure 36. Great Zimbabwe occupation phases and marshy areas (after Sinclair et al 1993).

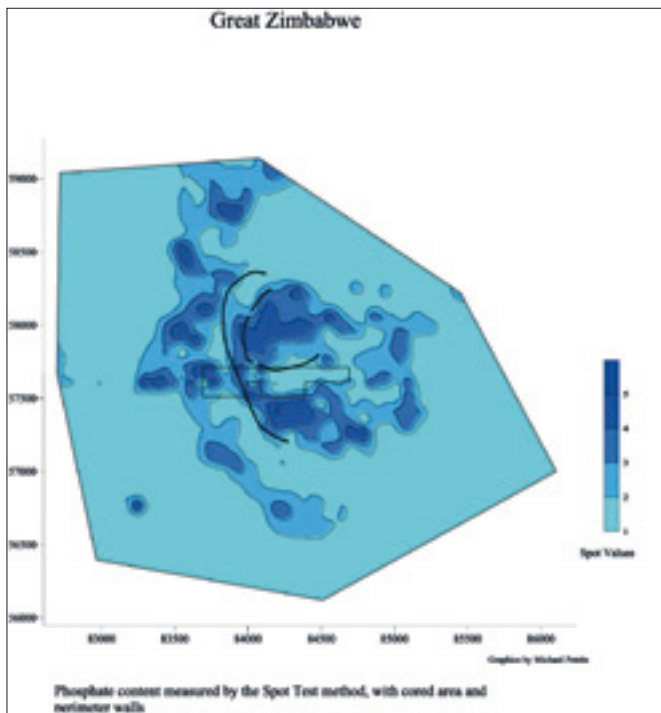


Figure 37. Great Zimbabwe Phosphate analysis results (after Sinclair and Petren 1999).

residents were not present throughout the year.⁶⁹ Judging from similarities of walling styles and ceramics, Great Zimbabwe maintained an extensive network of contacts throughout the plateau and surrounding areas.

On the local intra-site level at Great Zimbabwe and other similar settlements it is not only the built environment that is significant but also the open green areas for maintaining ecosystem services and sustaining resilience and food security and the capacity for the settlement system to deal with crisis and adversity. The potential productive capacity of wetland areas is well known after the work of Prendergast in the Darwindale area of the northern plateau.⁷⁰ The extent of the settlement areas at Great Zimbabwe is shown by the location of occupation areas in relation to wetlands probably used for gardening as well as the phosphate distribution map (see Figs. 36 and 37).⁷¹ Priorities for future research must

69 Fletcher 1999.

70 Prendergast 1979.

71 Sinclair 1987, 110; Sinclair et al. 1993, 711–712.

include obtaining macrofossil botanical samples to help clarify urban metabolism at Great Zimbabwe.

In the Limpopo Valley pioneer work at Mapungubwe⁷² was followed by a series of contributions outlining the extent of the settlement and culminating in showing that the occupation at Mapungubwe immediately preceded that of Great Zimbabwe.⁷³ Recent research has focused upon the subsistence economy, herding and food cropping on the seasonally inundated zones of the Shashe-Limpopo confluence.⁷⁴ In a further important development Schoeman has demonstrated the role of rainmaking cults enhancing the ideological power and prestige of the rulers of the hilltop settlements with ramifications for understanding state formation and urban development elsewhere in southern Africa.⁷⁵ Current research is focusing on ecodynamics from a resilience perspective and implementing a phosphate mapping programme around Mapungubwe which will permit comparisons with Great Zimbabwe.

On an inter-site level local and regional variation in resource availability and trade networks leading to linked lattices of settlements, whose occupants and rulers find it advantageous or necessary to undergo urban transitions, are important to include within the analytical frame. There is a rather belated realization among archaeologists that centralized urban hierarchies rather than a material expression of the natural progression of human history from an evolutionist standpoint are in some circumstances an over-elaborated form of complexity. It is significant that a characteristic of the pre-colonial agricultural regime chiefly centred on the Zimbabwe plateau which sometimes developed into towns is often a form of transience or a relatively short period of occupation sometimes lasting only a few decades (Sinclair 1987; Sinclair *et al.* 1993).

Further to the south, in the auriferous areas of the Witwatersrand, path-breaking survey techniques were implemented in the 1960s,⁷⁶ and they were also introduced in the Free State province.⁷⁷ Research on the iron-working farming communities has grown enormously and for instance terraced field systems are now known to occur widely in the Mpumalanga Province (formerly Eastern Transvaal),⁷⁸ but whether these represent means of extending basic subsistence agriculture to marginal areas as is the case further north in Nyanga⁷⁹ or supporting population aggregations taking advantage of commercial trading possibilities as in the ivory trade in East Africa remains to be assessed. Nevertheless with the new historically oriented research the basis has been created for extending Mason's early initiative⁸⁰ towards a better understanding of the origins and development of the vast conurbations of Johannesburg and Pretoria.

72 Fouche 1937.

73 Gardner 1963; Meyer 1998; Huffman & Vogel 1991. Huffman 2009.

74 See Manyanga 2006 for overview.

75 Schoeman 2009.

76 By Mason 1964; Seddon 1968.

77 By Maggs 1976.

78 Delius 2007.

79 Soper 2007.

80 Mason n.d.



Figure 38. Zimbabwe modern towns.

Industrial regime urbanism

The field of overlap between archaeology, history and modern sociology and development planning, in short sustainability studies, is very complex and new. It is not the intention here to provide a road map through the pitfalls, which are many. This task is best treated by the inclusion of specialists in a collective future-oriented analysis which hopefully will be the topic of future research.

The incursions from South Africa of European and other settlers in the second half of the 19th century mark the beginning of the establishment of capitalist relations of production on the Zimbabwe plateau. The character of Bulawayo in the southwest Zimbabwe plateau as a jump-off point for the occupation of the region with its origins closely associated with Old Bulawayo, the settlement of Lobengula who was the ruler of the previous Ndebele state, differed markedly from Fort Salisbury (later Harare) on the northern plateau in the auriferous areas with high agricultural potential. The early history and growth of these centres has been the focus of some research attention⁸¹ as has relations with early traders on the plateau⁸² and, importantly, resistance by the African populations to settler control.⁸³

The cynical clearances by the European settlers of Shona farmers from their lands and the imposition of taxes forcing participation in the capitalist economy are complex issues which together with the increased influx of settlers and the consolidation of government led to significant growth and expansion in a number of urban centres (Fig. 38).¹ Energy sources from agriculture, mining of precious metals and coal, and ultimately the harnessing of significant amounts of hydro-

81 For example by Beach 1980, 1995; Yoshikuni 2001; Pikirayi 1999.

82 Beach 1980; Bhila 1982; Mudenge 1988.

83 Ranger 1967.

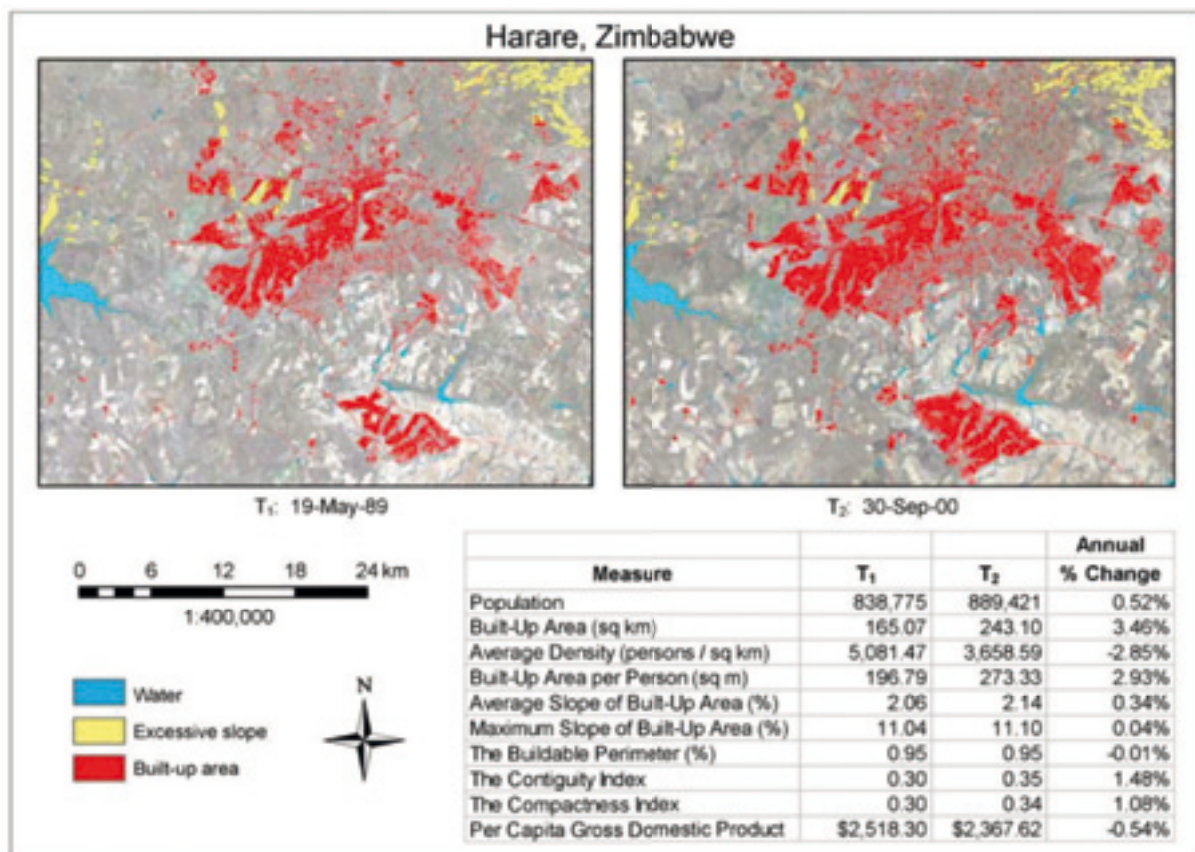


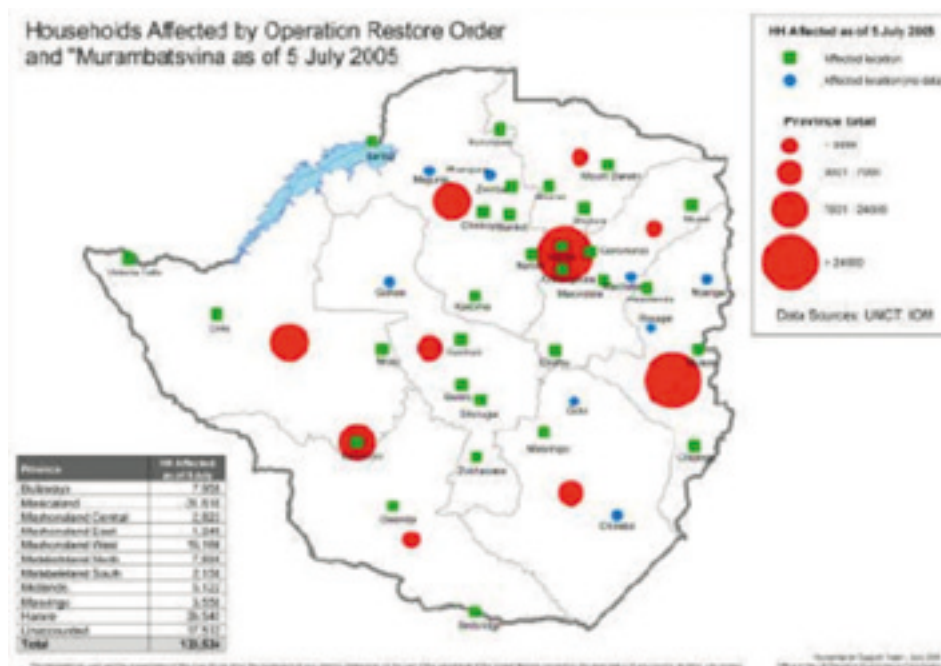
Figure 39. Spatial expansion of Harare (after Shlomo, Sheppard and Cevca 2005).

power from the Kariba dam on the Zambezi River made an abundance of cheap energy available, leading to further growth in the major urban centres.

In independent Zimbabwe the population of Harare expanded from about 650000 in 1982 to about 1 million inhabitants by 1992, and by 2002 the figure had reached approximately 1400000 inhabitants. Bulawayo was at more than 400000 in 1982, shortly after independence, rose to 620000 by 1992 and 677000 by 2002.² Current estimates vary from about 675000 to more than 2 million when informally settled inhabitants are included.³ Leaving aside the political issues which are obviously crucial and normally central in reporting from Zimbabwe,⁴ factors directly affecting slow demographic variables in the long-term settlement dynamics of the Bulawayo region, in particular the availability of water, become painfully apparent. The recent hyperinflationary economic situation and the lack of significant investment capacity exacerbates economic perturbations leading to infrastructural breakdown. This has already occurred in the 1990s with the relocation of some industries from Bulawayo to the Harare region.

The question is, just how sustainable are the cities of the Zimbabwe plateau established in the 19th and 20th centuries? Given the predicted effects of climate change,⁸⁴ and the rising price of obtaining oil as well as the uncertain future of this energy resource, the economic, political and social consequences of maintaining vast centralised urban agglomerations will be crucial for the futures of Zimbabwean populations. Obtaining an understanding of the variability in food

⁸⁴ IPCC 2007.



availability in the period 1990–2000 which saw a significant spatial expansion of Harare (*Fig. 39*), in relation to the popular involvement in urban agricultural initiatives in the hyperinflationary period to 2010, might usefully be the topic of future research. This can only be contemplated when the human costs of the current crisis including forced clearances of Operation Murambatsvina throughout the country leaving hundreds of thousands urban dwellers homeless (*Fig. 40*)⁸⁵ have been acknowledged and mitigated. Elsewhere on the continent the growth rate of mega-cities such as Kinshasa and Lagos are amongst the highest in the world, but even more significant is the rapid increase in smaller urban complexes as seen, for example, in Nigeria and Malawi. There are currently 43 cities in Africa with more than 1 million inhabitants and this is expected to rise to about 70 by 2015.⁸⁶

From an integrated history and historical ecology perspective,⁸⁷ solutions lie not just in terms of increased external investment aimed at maintaining a colonial structure which might well not be suited to long-term sustainability, but rather in discussing options which might include a more distributed spread of investments raising the resilience of the settlement system as a whole by strengthening urban networks and infrastructure and food production systems throughout the Zimbabwe plateau. As was stated at the beginning of this chapter the approach taken here and the methods used are intended to be assessed and if found appropriate applied elsewhere in the world. Given the increasing global prevalence of the urban form of settlement it follows that in responding to the effects of cli-

85 UN HABITAT 2005, 2009.

86 UNEP, Grid Arendal 2002.

87 Balée 2006.

mate change and socio-political and economic crisis the urban mind now represents a global cognitive dimension which governs the decisions which are central in dealing with the future well-being of, arguably, everyone on Earth.

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