Comparing Urban Heterogeneity

27-28 June 2022

Organisers: Rubina Raja and Søren M. Sindbæk Centre for Urban Network Evolutions (UrbNet), Aarhus University









COMPARING URBAN HETEROGENEITY 27-28 JUNE 2022

Front cover

- 1. Ribe, Denmark (Photo: Museum of Southwest Jutland)
- 2. Rome, Italy (Photo: Geolmage, Astrium Services)
- 3. Machkhomeri Hill, Georgia (Photo: Davit Naskidashvili)
- 4. Doliche, Turkey (Photo: Michael Blömer)
- 5. The Great Enclosure, Great Zimbabwe (Photo: Federica Sulas)
- 6. Jerash, Jordan (Photo: Rubina Raja)

Table of Contents

Outline	4
Programme	6

Abstracts

10
11
12
13
14
15
16
17
18
19
20
21
22

Notes	
Venues	
Organisers	
Conference website	27

Outline

Recent years have seen a profound transformation in the way archaeology approaches early urbanism. Famously defined by large, dense and heterogeneous settlements, the evolution of urban societies has been compared as a basic parameter of social complexity globally, and a vector of the power of societies to generate and allocate resources for non-agricultural specialisations. In this optics, the key dimensions for the evolution of early urban sites have been size and density.

New developments, however, increasingly put the onus on the third aspect: heterogeneity. Empirical studies and theoretical critique challenge the models that link urban settlements to a particular stage of social evolution. They also suggest that there may be no consistent link between the size of urban societies and their potential to facilitate a diversity of identities and activities. New methods greatly expand archaeology's power to register just such diversity, in terms of the origin and movement of inhabitants or the flows and processing of materials.

This conference asks how we may reframe comparative archaeological studies of early urban societies to focus on the evolution of heterogeneity. We seek to explore what are the data and methodologies that can allow robust comparisons in this respect between places and societies; and what are the models that can frame an understanding of patterns, trajectories and causation.

We propose to frame the study of urban complexity or heterogeneity as an aspect of social technology in the sense of economist W. Bryan Arthur: as a domain evolving by combining and re-combining previous technologies for new ends. In this perspective, an essential urban process is the coming-together of skills and knowledge, and evidence for experimentation, play and tinkering with ways-ofdoing. We want to explore if such processes were generally concentrated in large urban centres, or whether they are associated with different parameters of society. In doing so, we are also questioning historical assumptions that underlie the trend for nucleation and megalopolis in the contemporary world. Are big cities really essential for big developments? Or has urban complexity been achieved historically along different paths.

The conference is focused on facilitating comparative frames of reference. For this purpose, we ask for each presentation to reflect on the following questions:

- How can urban societies in your field be characterized in terms of heterogeneity of social roles and fabric, activities, economy and culture?
- Is heterogeneity a factor that specifically marks out urban societies in this case, or is the heterogeneity of cities simply a constituent part of the wider social fabric?
- To what extent is heterogeneity in urban societies in question associated with continuous processes of development in material or social technologies? (not necessarily salient breakthroughs associated with the establishment of cities, but how urban societies act over time in terms of processes of tinkering, adaptations, recombination, etc.)
- To what extent can the pattern of heterogeneity be seen as a factor that affects the development of urban societies over time?

Programme

6

DAY 1: Monday 27 June 2022		
9:00- 9:30	Coffee (3rd floor)	
9:30- 10:00	Welcome and Introduction Rubina Raja and Søren M. Sindbæk	
10:00- 10:30	'Seeing if it Fits': Trying Out of Urban Life in the 9th to 7th Millennium BC in Southwest Asia Tobias Richter	Moderator: Rubina Raja
10:30- 10:50	Discussion	
10:50- 11:20	Heterogeneity in the Early Cities of Northern Mesopotamia Augusta McMahon	
11:20- 11:40	Discussion	
11:40- 13:00	Lunch (3rd floor)	
13:00- 13:30	Relating Scale and Heterogeneity Jack Hanson	Moderator:
13:30- 13:50	Discussion	Tønnes Bekker- Nielsen
13:50- 14:20	Diversity of Indus Cities and Rural Settlements (2600-1900 BCE): Heterogeneity, Integration and Technology Jonathan Mark Kenyoer	
14:20- 14:40	Discussion	
14:40- 15:10	Coffee break (3rd floor)	

15:10- 15:40 15:40- 16:00	Large, Dense and Heterogeneous at Giza: A Proto- City for Building Pyramids c. 4600 BC Mark Lehner Discussion	Moderator: Ingolf Thuesen
16:00- 16:30	From Anyang to Zhouyuan: Evolution of Heterogeneity in Bronze-Age China Li Min	
16:30- 16:50	Discussion	
16:50- 17:00	Recap Day 1	
17:00- 17:45	Drinks (3rd floor) The Royal Danish Academy of Sciences and Letters	
18:00	Speakers' dinner Restaurant Gorilla, Flæsketorvet 63	

DAY 2: Tuesday 28 June 2022		
9:00- 9:30	Introduction Day 2 Rubina Raja and Søren M. Sindbæk	
9:30- 10:00	Urban Evolution between Major Civilizations: The Bronze-Age City of Dilmun Steffen Terp Laursen	Moderator: Stephanie Wynne-
10:00- 10:20	Discussion	Jones
10:20- 10:50	What if Urban Societies Were Meant to be Impermanent? Shadreck Chirikure	
10:50- 11:10	Discussion	
11:10- 11:40	Heterogeneity and Urban Practices in the Mongol Empire Jan Bemmann	
11:40- 12:00	Discussion	
12:00- 13:20	Lunch (3rd floor)	
13:20- 13:50	Andean Urbanism and its Peculiarities Krzysztof Makowski Hanula	Moderator:
13:50- 14:10	Discussion	Søren M. Sindbæk

14:10- 14:40	'Impossible' Models of Urbanization in Early Bronze- Age Southern Eurasia Massimo Vidale	
14:40- 15:00	Discussion	
15:00- 15:30	Empire and Heterogeneity in the Roman World Miko Flohr	
15:30- 15:50	Discussion	
15:50- 16:20	Coffee break (3rd floor)	
16:20- 17:00	Final Discussion and Concluding Remarks	Moderator:
17.00		Søren M. Sindbæk
17:00- 17:45	Drinks (3rd floor) The Royal Danish Academy of Sciences and Letters	
18:15	Speakers' dinner Restaurant Kiin Kiin Bao Bao, Vesterbrogade 96	

Abstracts

'Large, Dense, and ... Heterogeneous': A Comparative Approach to Urban Heterogeneity

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Recent years have seen a profound transformation in the way archaeology approaches early urbanism. Famously defined as large, dense, and heterogeneous settlements, the evolution of urban sites has been compared as a basic parameter of social complexity globally, a vector of the power of societies to generate and allocate resources for non-agricultural specializations. In such optics, the key dimensions for the evolution of early urban sites have been size and density. New developments, however, put the onus on a third aspect: heterogeneity. Empirical studies and theoretical critique challenge the models that link urban settlements to a particular stage of social evolution. They also suggest that there may be no consistent link between the size of urban societies and their potential to facilitate a diversity of identities and activities. Meanwhile, new methods greatly expand archaeology's power to register just such diversity, in terms of the origin and movement of inhabitants or the flows and processing of materials. This paper asks how we may reframe comparative archaeological studies of early urban societies to focus on the evolution of complexity and heterogeneity. We seek to explore what are the data and methodologies that can allow robust comparisons between places and societies, and what are the models that can frame an understanding of patterns, trajectories, and causation.

'Seeing if it Fits': Trying Out of Urban Life in the 9th to 7th Millennium BC in Southwest Asia

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Around 8000 BC, during the middle Pre-Pottery Neolithic B (MPPNB), a number of large and densly occupied settlements appear in the archaeological record of Southwest Asia. Concentrated mostly in the southern Levant and central Anatolia, their appearance is associated with the increasing importance of domesticated plants and livestock, the formation of household-based economies, construction of communal buildings, social stratification and inequality, craft specialization and increasingly extensive exchange of material culture within expanding social networks. Although these settlements have been the subject of extensive debate over the years, the terminology used to describe them – mega-sites, large villages, towns, central places, proto-urban – reflects the difficulties archaeologists have in trying to fit them into grand evolutionary narratives of the origins of urbanism and social complexity. The partial or complete abandonment of these settlements towards the end of the 7th millennium BC has invariably been described as a 'collapse' and therefore a failure of this early flirtation with urban life, which is commonly been put down to external environmental and ecological factors.

In this talk I will revisit the discussion about the appearance and collapse of these PPNB 'mega-sites' in terms of heterogeneity. My goal is to disconnect the development of these specific forms of settlement from grand narratives that place their emergence and disappearance on an evolutionary continuum from camps, hamlets and villages to towns and cities. Rather than seeing these settlements as the outcome of population growth driven by increased food production, I will argue that we ought to reconsider them as the result of seasonal processes of aggregation that took place in autonomous social structures in which communal ceremonies played a crucial role. As such, these forms of urbanity reflect previous processes of seasonal aggregation and place-making that can be traced back to the Epipalaeolithic societies of the Late Pleistocene.

COMPARING URBAN HETEROGENEITY 27-28 JUNE 2022

Heterogeneity in the Early Cities of Northern Mesopotamia

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The cities of northern Mesopotamia during the early to mid-4th millennium BC are among the world's earliest, and they provide an exciting opportunity to examine pristine urban socio-economic developments. I will focus on Tell Brak in northeast Syria, an early city that appears to conform to Wirth's definition of cities as large, dense and internally heterogenous. However, Brak's occupation density was variable, linked to its internal social and economic variability. The best evidence for its social heterogeneity comes from secular and religious power institutions, which suggest status hierarchies but also both hard and soft power. Economic heterogeneity is reflected in new modes of production, building on pre-existing specialisation of labour. These new modes of production were again heterogenous, comprising both centralised organization of manufacturing and flexible private production. Brak's diversity of production modes fit Arthur's concept of complexity economics (2015, 2021), in which the economy is constantly in flux rather than equilibrium, problems are not well defined, and 'rational' economic responses are not necessarily the most effective. The potential tension between hard and soft power, and between centralised and diffused production, allows us to speculate on urban systems of competition and collaboration, and which of these have preurban roots.

Relating Scale and Heterogeneity

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Two key issues within comparative urban studies concern, first, distinguishing between the effects of the scale of settlements and local conditions and, secondly, comparing different societies with different prevailing social and economic conditions. In this talk, I will begin by reviewing new theoretical and empirical developments, which not only allow us to track how discrete or continuous variables, such as infrastructure or socioeconomic conditions, vary with population, but also to estimate a baseline rate for each measure and each context, providing a new framework for comparative work. I will then explore the implications of this work for our understanding of the heterogeneity of settlements, focusing on how a combination of the social networks that are embedded within built environments and path dependence can come together to create settlements that are both more socially and economically diverse and able to maintain specific local identities, economic specialization and material cultures. I will then suggest a new method for revealing the similarities and differences between sites, which attempts to compare and contrast sites after taking account of their radically different sizes and baseline socio-economic conditions, using well-documented case-studies such as Rome, Pompeii, and a selection of Romano-British sites, including London and Silchester. I will then conclude by discussing the extent to which this method can be used to group sites into new, scale-neutral, typologies.

Diversity of Indus Cities and Rural Settlements (2600-1900 BCE): Heterogeneity, Integration and Technology

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4

Indus cities and rural settlements have long been seen as distinct from urban centres in other major contemporaneous urban societies. New research on the development of Indus urban centres will be presented that identifies distinctive aspects of settlement organisation and technology that can be linked to diversity and integration. While most large urban centres and smaller towns do share some features, detailed analysis of technology and style reveal regional patterns that were not noted by earlier researchers. One of the major features of Indus cities and towns is the use of well-maintained perimeter walls that provide strong evidence for indirect control of everyone entering and leaving the settlement. At some sites, such as Harappa, walls were separately constructed around four or more adjacent habitation areas or mounds. The perimeter walls at Harappa were expanded and maintained throughout the 700 years of the settlement history, while at other regional sites there are periods of fluctuation that may indicate major changes in the internal composition of the settlement. The analysis of raw materials sources for the site of Harappa and other settlements provides clear evidence for the major trade networks linking diverse regions and these regions are also possibly the source of the diverse populations who came to live at the sites. In addition, some limited evidence from strontium isotope analysis of skeletal remains from the cemetery at Harappa provide evidence for the movement of people to Harappa from outlying areas. The importance of economic and ideological coercion for the integration of diverse communities will also be discussed since there is no evidence for military coercion or the use of walled settlements in regional conflict.

Large, Dense and Heterogeneous at Giza: A Proto-City for Building Pyramids c. 4600 BC

Mark Lehner University of Chicago markelehner@gmail.com

In terms of its contribution to the origin of urbanism in Egypt, I look at the Heit el-Ghurab site of the 4th-Dynasty (c. 2600 BC) settlement at the foot of the famous Giza Pyramids plateau. Here, to build what was until the 19th century AD the largest structures in the world, the Egyptian state reached for economies of scale in pushing people and products, assembling from their vocabulary of forms and prior catalogue of parts (houses, magazines, galleries, bakeries) a de facto urban centre. At HeG, archaeology has recovered 7 to 10 hectares of a footprint of the state; that is, 'state' in the sense of the entire condition that the Egyptian Nile Valley society had engineered, revolving around the royal house. At HeG, central authorities recombined pre-existing parts of both architecture and industry, and also pre-existing social 'parts'; that is, natural sodalities of the Egyptian Nile Valley. 'Technology is a set of phenomena captured and put to use', as economist Brian Arthur explained in his 2009 book, The Nature of Technology, and the phenomena can be behavioral as well as physical. At HeG, pyramid builders left an expression of how they 'captured' both physical and behavioral phenomena.

Arthur wrote about a moment in history when social and labour organisation of a larger scale than household ('cottage') industry emerged. That organisation was the 'factory system' when the 'necessary numbers were largely drawn from agriculture', and 'worker dormitories and worker housing were therefore provided'. On a practical level, 'new systems of ropes and pulleys' were required for 'transmitting power'. Technological and urban development came with new 'means of bookkeeping, means of management, and means of delivery of the product'. As people were formed into teams, they 'had to begin, pause, and stop in unison'. 'The factory was a new kind of prison', effecting change that branched throughout society – 'fractal structural change'. Arthur wrote all this regarding the Industrial Revolution that started in the 1760s AD. I would like to explore the idea that we see incipient, precociously 'modern' forms of such change more than 4000 years earlier, for building giant pyramids in Egypt, which would suggest urban and social unfoldings (evolutions), common across time and culture.



From Anyang to Zhouyuan: Evolution of Heterogeneity in Bronze-Age China

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During the final guarter of the second millennium BC, Anyang (36 sg. km) was one of the largest Bronze-age cities in the ancient world. Its urban development displays remarkable diversity in its social fabric, with cultural, economic and technological ties with the Mongolian Gobi to the north and the middle Yangzi in the south. Its urban spectacle was characterised by grand rituals sponsored by the royal and elite lineages, the operation of massive craft workshops and foundries and the movement of diverse peoples (envoys, armies, captives and artisans) and goods in and out of the city. After Anyang's urban florescence came to an abrupt end to Zhou conquest in the final decades of the second millennium BC, the rising city of Zhouyuan (approximately 200 sg. km, 800 km west of Anyang) not only accommodated diverse aspects of the Anyang urban tradition through forceful relocation of its inhabitants but also settled elite lineages of its highland allies in and around the city, resulting in the creation of a diverse urban society consisting of elite lineages of the Zhou and its allies, surrendered Shang elite lineages incorporated into Zhou's service, and artisan lineages deported from fallen Shang cities. The urban trajectory involves combining and recombining previous technologies from Anyang for new ends, especially the adaptation of Shang artisan skills and scribal knowledge for Zhou political demands. A defining attribute of this urban process is the changing nature of and significant expansion in literacy within the Zhou society. Once used primarily in the context of royal oracle divination in Anyang, the Zhou redirected the service of Shang royal scribes for administrative purposes and also for production of bronze ritual vessels with long inscriptions commemorating Zhou royal patronage. This is particularly important for establishing a network of Zhou military colonies granted to Zhou elite lineages. The grantees were connected with the Zhou royal power through ancestral rituals performed with the presence of these inscribed bronze vessels curated at their ancestral temples in Zhouyuan and in the colonies. The Zhou political vision, therefore, came together with the scribal skills and bronze-casting knowledge of the Shang subjects, resulting in a significant expansion of urban heterogeneity in Zhouyuan during the first guarter of the first millennium BC. This research highlights the need to study urban complexity or heterogeneity as an aspect of social technology characterised by processes of adaptation and experimentation.

Urban Evolution between Major Civilizations: The Bronze-Age City of Dilmun

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On Bahrain Island, a fortified urban settlement (Qala'at al-Bahrain) emerged, c. 2000 BC which served as the commercial and political centre of the Dilmun kingdom and state. This city of Dilmun appeared midway on the sea route between the major urban centres of Babylonia and the Indus region and arguably remains the only urban settlement in the Persian Gulf until the Hellenistic. Concomitant with the rise of Dilmun as a commercial centre, administrative technologies, e.g. weights, tokens and seals, which had existed for millennia in the neighbouring societies, were introduced as distinctly local hybrid adaptations to outside standards. In the north-west, an island colony was established near Kuwait to strengthen the transport network and commercial fleet. The small kingdom would develop a vast 2 million km2 commercial network ranging from Syria in the north-west to Gujarat in the east and the Saudi/Yemenite border lands in the south and controlled the trade in Makkan (Oman) copper until c. 1700 BC.

This contribution sets out to explore the emergence of urbanization in Dilmun, as a process of strategic adaptation to opportunities resulting from a superregional power vacuum, c. 2000 BC. Urbanization appeared in tandem with kingship and an early state organization. Resulting in and enabled by this increased complexity, Dilmun swiftly attracted and dominated the commercial networks of sea trade. Inquiry is made into the seemingly vulnerable position of Dilmun with only minor capacity for subsistence surplus production and a near absence of local articles of trade, which combined made the polity highly dependent on its distributed networks.

What if Urban Societies Were Meant to be Impermanent?

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18

Southern Africa hosted several hundreds of urban centres with both short and long occupational duration from CE 1000 to the late 1800s. Within the limitations of radiocarbon dating, some were intensively occupied for a mere half century or less while others were repeatedly lived for as much as 500 years. This shows that population aggregation, disaggregation and reaggregation were features of ancient southern African urban formations. Variation in temporality correlated with the nature and types of urban formations and the investments made into permanent structures such as monumental architecture. Apparently, the economy, technologies used and crafts were adapted to both short- and long-lived urban formations. This paper grapples with heterogeneity in southern African social formations, paying special attention to variables such as crafting, estimates of demography and adaptive responses to changing climates. The conclusion is that impermanence was an adaptative response aimed at achieving sustainability across the ages.

Heterogeneity and Urban Practices in the Mongol Empire

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Cities on the Eastern Eurasian Steppe were built from scratch, and the inhabitants were collected from all over the quickly expanding empire and brought to the newly established settlements. That means the composition of the population was heterogenic right from the start, and this concerns not only the origin but the religion and skills of the gathered community as well. Karakorum, as the imperial capital, attracted merchants and envoys whose origins ranged from Europe to Korea. On the other hand, the whole settlement system was dependent of the ruler and the elites. This paper is dedicated to the search for evidence of heterogeneity in material culture and urban planning.

Andean Urbanism and its Peculiarities

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In the author's opinion, the characteristics of what is usually considered urbanism from the perspective of comparative archeology adopt very different modalities in different regions and times. Consequently, it is more appropriate to speak of different urbanisms than of a single theoretical concept, valid both from a global and local perspective. This is even more evident when one follows the approaches of V. Gordon Childe, assumed as the obligatory theoretical framework by the majority of Peruvian archaeologists. Let us recall that from the Marxist point of view, different modes of production would be expected to imply different types of urbanism in the context of varied technologies, different environmental contexts, and relations of production and distribution. The Andean case invites us to answer "no" to the question: "Are big cities really essential for big developments? It seems rather that "urban complexity has been achieved historically along different paths". Due to their characteristics, the settlement patterns in pre-Hispanic Peru could be called anti-urban systems. In all periods, the population lives dispersed in settlements of 0.5-10 ha on average. The settlements considered urban have spatial organization and functions as ceremonial centres with large areas of public architecture and very small residential areas. The process does not have continuity. Between one period with monumental architecture in the history of each valley and another, there are 4-5 centuries or more with the change of cultural context in between. In the paper we will illustrate these particular characteristics with examples of the author's excavations on the Peruvian coast.

'Impossible' Models of Urbanization in Early Bronze-Age Southern Eurasia

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The title of the communication underlines the fact that it is still impossible, or considerably implausible, to propose hypotheses on the foundation and development of the first large urban settlements in the Early Bronze Age in the southern part of the Eurasian continent. The proto-urban phenomenon in regions such as the Iranian Plateau, South Central Asia, and the Indo-Pakistani Subcontinent was of enormous proportions but relatively short-lived, partly due to dramatic climatic events on a planetary scale; the size of the abandoned cities and the destructive action of the atmospheric agents constitute a dramatic challenge to the most simplistic reconstructions in this regard. However, it is abundantly clear that different 'cities', in different historical contexts and periods, arose according to their own dynamics and are difficult to compare with one another.

Empire and Heterogeneity in the Roman World

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The urban history of the Roman world is a history in which heterogeneity plays a crucial, yet under-appreciated role. While urban communities in the Mediterranean had already become increasingly complex and diverse before the emergence of the Roman Empire, it is clear that Roman imperial hegemony had a direct impact on urban heterogeneity throughout the Mediterranean, albeit in different ways in different localities. Thus, a history of the way in which imperial hegemony translated in urban heterogeneity is a crucial aspect of the history of the Roman world as such. In this paper I will focus on the development of socio-economic heterogeneity in three localities in the heart of Rome's imperial network: Pompeii and Delos in the late Hellenistic Period, and the Roman Metropolis in the Early Imperial period. These will be contrasted with several communities that were situated more in the margins. Using building technology as a case study, it will be analysed how emerging social heterogeneity impacted on technological practices.



Notes



24 COMPARING URBAN HETEROGENEITY 27-28 JUNE 2022

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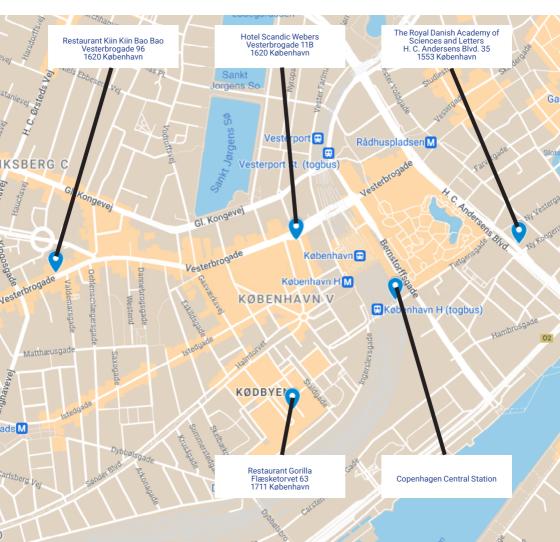


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26

COMPARING URBAN HETEROGENEITY 27-28 JUNE 2022

Venues



Organisers

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Conference website

https://urbnet.au.dk/news/events/2022/comparing-urban-heterogeneity



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Back cover:	Roman road in the Golan Heights (Photo: Adam Pažout)