The operation of monumentality in low occupation-density settlements in prehistory: a regional scale view

Kirrily White & Rachel Lane

Introduction

Monuments are multi-functional, operate on multiple scales, and can be envisaged in general and abstract terms, as well as in particular terms. The prevalence of monument construction globally and over deep time indicates that it represents a successful human behavior. However, it is difficult to compare monuments on a global scale given the extraordinary diversity of construction contexts, cultures, and material outcomes in the archaeological record. One way to address the issue of comparison is to contextualize the analysis of monuments within a broader settlement and landscape approach. Such a framework, however, requires a reappraisal of the implicit philosophical understanding of monuments as 'ontologically isolated' which is arguably a limiting factor in the creation of a viable theoretical framework. The 'ontological turn' is a recent trend in the philosophy and theory of archaeology, offering a critical reflection on the materiality of objects (Caraher 2016: 326). Instead of an isolationist view, the role of monuments can be conceptualized within landscapes as stabilizing operators carrying slow-changing spatial messages across broad temporal and areal scales. An expanded view provides the opportunity to observe monuments as active components of regional order and large group formation. They appear to have been an important structuring principle of very large, low-density settlement in prehistory where we would expect dispersed occupation patterns to be a significant challenge to group coherence.

In his work on *The Limits of Settlement Growth*, Fletcher (1995) identified three trajectories of human settlement behavior from high to very low occupation density at different population scales over time. The low-occupation-density settlement outcomes of the first trajectory to areal extents beyond 100 ha are the subject of current research and more than 190 examples have been identified across the world (White n. d.). Of these sites, more than 75 per cent have monumental structures. While their local conditions of development were diverse, these settlements

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

typically appeared in regions with stable long-term settlement building traditions including traditions of building monuments and well-established regional and supra-regional interaction networks. In most regions, there are multiple contemporaneous examples and many smaller examples with the same morphology. This suggests that their emergence might be usefully considered in terms of regional rather than local operational parameters. The issue of monumentality and the extensive deployment of monument building across regions which produced these settlements highlights the importance of considering other types of regional cohesion than centrality. In the context of these settlements, monuments operated not only as focal components of place, but expanders of relational space and stabilizers of regional populations.

An operational view of monuments – theoretical context

Monuments are a long-term staple of archaeological studies (Osborne 2017: 163). Over time, archaeological approaches to studying monuments have raised several high-stakes epistemological issues. One of the greatest concerns has been to formulate a coherent framework within which to analyze monuments and monumentality in the past. Osborne (2014: 3) would ultimately like to see a unifying cross-disciplinary discourse for monumentality, but there are strong challenges to be overcome in the diversity of approaches and myriad of definitions. In the late 1980s, Bradley and Chambers (1988: 271) claimed that the study of monuments had been largely particularist and that "there has been less willingness to generalize about the nature of monuments and the monumental". If a general theory is not viable due to epistemological and definitional issues, it might be possible to address the problematic binary of particularist/generalist through the behaviors of monuments at regional and settlement scales of operation within the context of these large, low-occupation-density settlements. This view does not preclude other questions about monuments at different scales of analysis, but it proposes that the operation of monuments as objects can be decoupled from culturally specific meanings for comparative purposes. This broader operational view is contingent upon shifts in the ontological understanding of monuments.

In Aristotelian metaphysics, ontology refers to the study of the substances or essences of physical entities or being. More than forty years ago, David Clarke envisaged that archaeology in the future would enter into an era critical of self-consciousness by means of metaphysical study, suggesting that "[a]rchaeological metaphysics is the study and evaluation of the most general categories and concepts within which archaeologists think; a task long overdue" (Clarke 1973: 12). Clarke was prophetic in this sense, as ontology is perhaps the latest buzzword in archaeology, made explicit and popularized by Olsen (2010) in his work *In Defense*

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

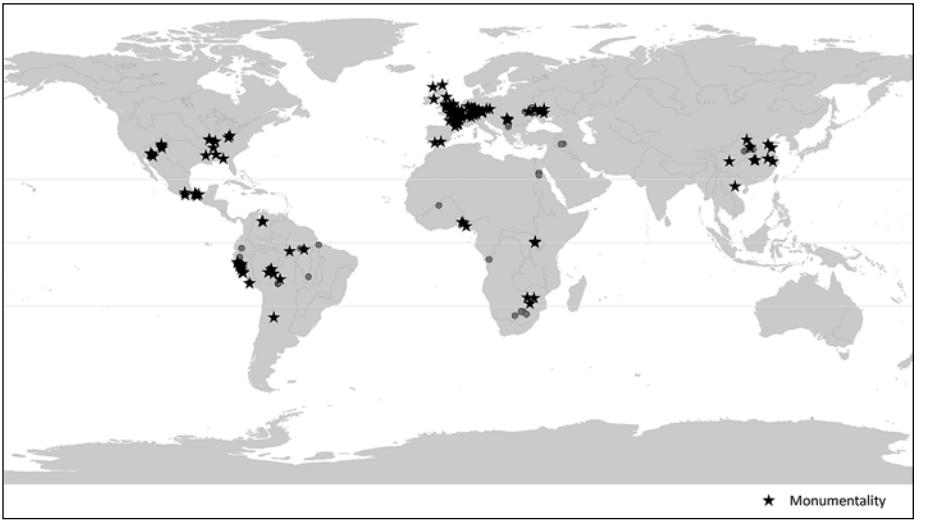
of Things: Archaeology and the Ontology of Objects. Olsen (2010) reconfigures material 'things' as important in their own right and not merely as epiphenomena of the social world. Ontological studies concerning the human individual in the past had already been taken up in the overtly humanistic phase of archaeological theory in the late 1980s (eg. Hodder 1992; Shanks/Tilley 1987). Postprocessual theorists critiqued the understanding of humans in the past as rational, universal, and autonomous (Silliman 2001: 192), ultimately attempting to de-essentialize the human category. In the context of this paper, the nature of monuments requires reorientation whereby the category is not viewed as fixed or universally understood. It is possible to have a definition of monument that is de-essentialized, meaning it is applicable to a broader scale and more generalized view without allegiance to the universal properties of monuments such as 'size'.

The term 'monument' normally implies qualities of massive size and longevity due to the frequent use of highly durable materials in construction. While acknowledging that monumentality as a quality is not predicated on specific types of materials, in terms of research, the archaeological record has a historical bias towards features which are materially substantial, evocative, and awesome. As monuments are typically anomalous or exceptional in their mediums and contexts, this has meant such features have had a strong influence on theorizing about the social world. There is a broad assumption that size and saliency correlates to complex social mechanisms within which labor and supporting resources could be organized. The idea that there is an indexical relationship between monument size and social complexity stems back to Renfrew's (1973) work on Neolithic Wessex (Thomas 1999: 34). It can be argued, however, that treating the material as an epiphenomenon of the social world by drawing causal connections between 'elite' power, labor, and monument building has contributed to the subordination of materiality to social concerns in archaeology and produced knowledge about the past that is regionally particularist and difficult to use in cross comparison. This epistemological problem in archaeology partially accounts for Bradley and Chambers (1988: 271) claim of the lack of willingness to generalize about monuments in the discipline.

The particularist view of monuments in archaeology is arguably part of a wider set of modern cultural perceptions of the past whereby the disjunction of implied past grandeur and accomplishment of monuments and present degraded materiality is the subject of a romanticized and somewhat nostalgic view. This is also a reminder that monuments continue to have meaning into the present because of their materiality. On Salisbury Plain in southern England, the author of *Tess of the D'Urbervilles*, Thomas Hardy (1891: 501–504), creates of Stonehenge a "monstrous place". Hardy's phenomenological treatment of monument, allowing his characters to encounter it as an unknown presence in the dark, reminds us that the material bulk of monuments has meaning even though non-verbal. The image of

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 1: Global distribution of large, low-occupation-density settlements with monumentality



the monument as a fixed and isolated presence in the landscape is important intuitively because it resonates with our sense of connection with the past and past experience. The experiential and perceptual domains of interaction with monuments are of course important subjects for analysis at different temporal scales but these types of concerns are situationally unique, and it is difficult to form from them a generalist view.

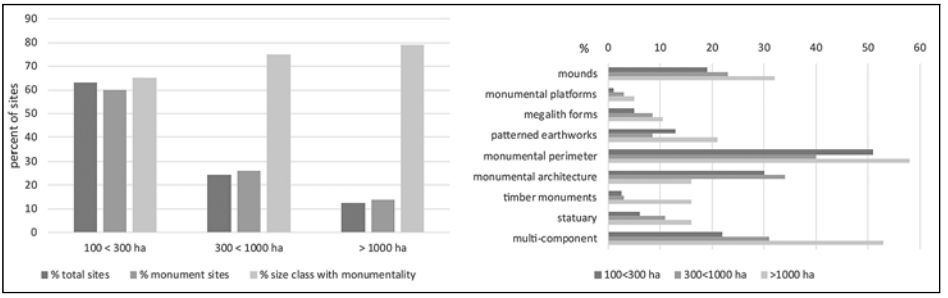
As a mechanism for expanding an analytic view beyond ontological isolation, monuments are reconsidered here as non-verbal regulators of interaction on multiple scales. Within this view and in the specific context of the low-density sites examined in this paper, a monument can be defined as a highly salient material entity with a slow rate of change, signaling a temporally specific, culturally agreed-upon value which, given its specific magnitude and location, can constrain behavior on multiple spatial scales. Defining monument as signal acknowledges that, given slow rates of change in durable materials, and while the verbal meanings of monuments are context specific, the endurance of monuments as physical forms in the landscape perpetrates a non-verbal message. This material behavior impacts the formation, maintenance and endurance of interaction and occupation patterns in a region over long periods of time (Fletcher 1995: 31) even as the active landscape system within which the monument was constructed collapses. In a profound way, monument construction can be allied to the kinds of regional stability which allowed large population aggregates to form coherent and viable settlements with dispersed occupation patterns in prehistory.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Monumentality in large, low-occupation-density settlements

Low-occupation-density settlements of less than or equal to around ten people per hectare on average and more than 100 ha in areal extent (see Fletcher 1995 for the theoretical basis of the threshold density) began to appear from as early as 5000 BCE in southeast Europe. One of the earliest forms was possibly the Vinča culture site of Belovode in eastern Serbia (Radivojević et al 2010). They appeared periodically across the world into the early 19th century CE in southern Africa with late examples in the largest stone-built Tswana settlements such as Molokwane in North West Province, South Africa (Steyn 2011; Morton 2013) (Figure 1). The significance of these settlements is that they were able to be sustained without the enormous amount and diversity of material and technological infrastructure usually associated with compact settlements of a similar areal extent (Fletcher 1995: 134–151). Moreover, compact settlements and small low-density settlements can be expected to scale in areal extent in predictable ways with population growth (Ortman et al. 2014), but these very large settlements formed and grew in diverse ways, not always by increasing population at their margins and not by uniformly densifying. Their formation and development processes were locally unique but, as Moore (2012: 413) suggests for the polyfocal complexes of the British Iron Age, they were typically integrated into broader regional economic and social systems and formed focal points for regional interaction. With two exceptions, all the settlements over 1000 ha in areal extent operated with monument construction (Figure 2). Moreover, while individual settlement durations and sizes could vary according to local conditions, across most regions this was a stable recurring settlement form. In Neolithic China, Iron Age Europe, the Amazon basin, and the western desert of the USA amongst other regions, the form only collapsed with region-scale catastrophic change. This would suggest that the stability of large, low-occupation-density settlement forms was intricately linked to operational stability on a regional scale, enacted in common regional traditions of which monument building was an important component.

Figure 2: Percent distribution of monumental elements across three size classes of low-density settlement



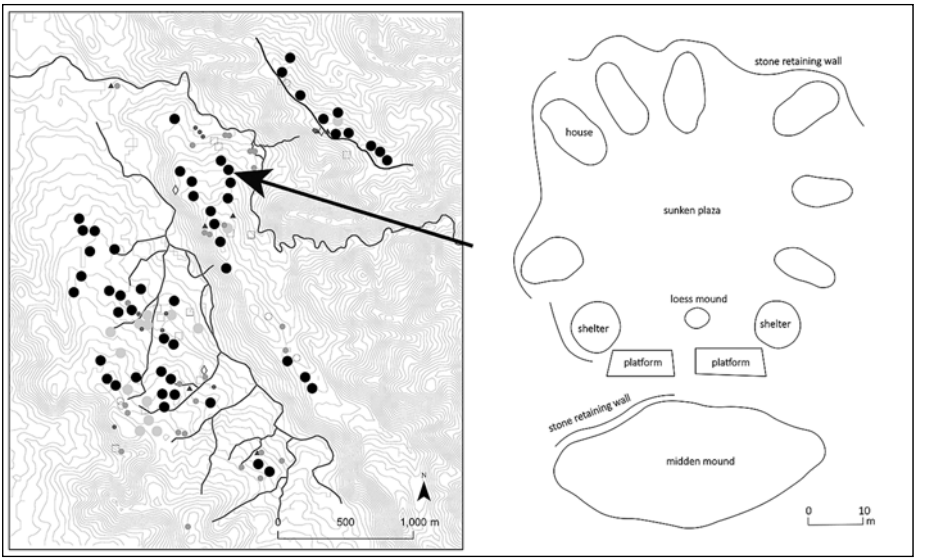
https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access -

Types of monument

The types of monument and monumental construction and the spatial configuration of monuments in these settlements were varied and culturally specific. Burial mounds and mounds which included burials as incidental to their primary construction were common to most regions and integrated in settlements in various ways. At some of these settlements such as at the Alamito culture Campo del Pucará in Catamarca, northwest Argentina (ca. 200–500 CE), houses were grouped in replicated units with a mound and plaza configuration and platforms associated with stone heads and figures (Nunez Regueiro 1970: 137) (Figure 3). In other regions, such as at the linear Camutins mound complex on Marajó Island in the mouth of the Amazon, large ceremonial or 'elite' mounds were clustered at the southern and northern ends of the site with habitation mounds predominantly clustered around the centre (Schaan 2004: 157–158). House monuments, architectural monuments, or great houses appeared first perhaps in the Trypillia culture of the Chalcolithic forest steppe zone in eastern Europe in ca. 3900 BCE with the mega-structures at Nebelivka (Chapman et al. 2014) and in the 3rd millennium BCE at sites such as Taosi in Neolithic China (He 2004; 2009). The first associations between these very large settlements and monumental architectural complexes appeared in the Norte Chico region of Peru, also in the 3rd millennium BCE (Figure 4). In southwest USA great houses appeared in the Ancestral Puebloan, Hohokam, and Mogollon cultures in ca. 900–1400 CE, and in southern Africa a version of enclosure households developed to monumental proportions at sites such as Mapungubwe and Great Zimbabwe in the 13th century CE (Manyanga/Pikirayi/Chirikure 2010: 577). Geometric enclosure monuments like Atlantic European Neolithic henges were also common to other cultures such as the geometric earthworks builders in Acre state, Brazil and in the Bolivian *Llanos de Moxos*. Stone statuary and other forms of megalithic monument were features of many time periods and regions including Neolithic, Bronze Age, and Iron Age Europe and the Olmec sites in Mesoamerica. Monumental-scale perimeter and areal features such as walls and ditches in earth and stone appeared in Europe, Africa, and Asia across multiple time periods and cultures.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 3: Supra-household scale monument and house clusters, Campo del Pucará (5 m contour lines generated from ASTER GDEM VOO2, NASA LP DAAC, 2015; house cluster after Nunez Regueiro [1970: Figure 2]; site plan after Gianfrancisco and Fernández [2016: 26])



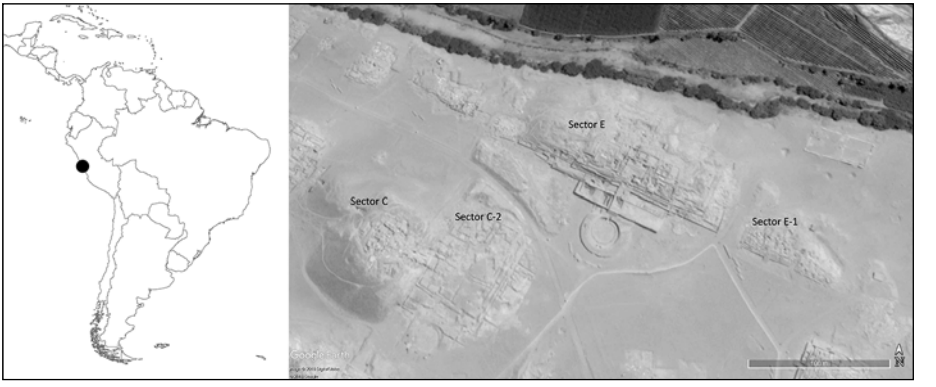
Monument building traditions

The tradition of constructing monuments typically preceded the formation of a large settlement, sometimes by more than a thousand years. The Mississippian culture site of Cahokia (ca. 1050–1350 CE), for example, was a more than 1200 ha agglomeration of mounds and plazas in a tradition of mound clustering and potential settlement formation that dated back to 3900–3300 BCE at sites like Watson Brake in the Lower Mississippi region (Morgan 1999: 35) (Figure 5). Cahokia was embedded in a landscape of broadly contemporaneous multiple and single mound sites extending across the central Mississippian and lower Ohio river valleys into the mid-south, with related cultures and trade connections extending further still. Locally, the site was connected by a road to a contemporaneous mound and shrine complex, the 'Emerald Acropolis' around 24 km to the east (Pauketat/Alt/Kruchten 2017: 207) and the Pulcher region mound sites around 25 km to the south (Kelly 2002: 136). In the middle Huanghe region of Neolithic China, the 280 ha Longshan culture site of Taosi (ca. 2300–1900 BCE) with its rammed earth enclosure walls, platforms and monumental ritual building (He 2004) was constructed in a building tradition which dated back to the Late Pengtoushan settlement of Bashidang (ca. 5540–5100 BCE) (Yang 2004: 43). It was one of at least four contemporaneous

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

walled sites of over 100 ha in the local region of the Linfen and Yuncheng river basins (He 2013: 257–259). Preceding and contemporaneous with the development of Taosi, rammed earth settlement walling and platform construction also reached monumental proportions at large and small settlements in the upper, middle, and lower Yangzi river regions. The territorial site of Liangzhu (5000 ha, ca. 2600–2200 BCE) in the Yangzi delta featured a rammed earth platform (Mojiaoshan) which covered around 30 ha and an enclosure wall around 7 km long and 40–60 m wide at the base (Qin 2013: 589). In the middle Yangzi river valley, the settlement complex of Shijiahe (800 ha, ca. 2600–2100 BCE) had a walled area with a surrounding moat 4.8 km long and 80–100 m wide. This site was the largest of around 17 walled and moated sites in close proximity on the Jianghan-Dongting plain (Zhang 2013: 511).

Figure 4: Caral, Norte Chico region, Peru. Monumental building sectors C and E (Image: Google Earth, DigitalGlobe 2018)



https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 5: (a.) The territorial sites of Liangzhu and (b.) Cahokia at the same scale as (c.) the bounded site of Taosi (5 m contour lines generated from ALOS PALSAR RTC high res DEM; Liangzhu after Liu and Chen [2012: Figure 7.12.]; Cahokia after Fowler [1989: Figure 2.7]; Taosi after Liu [2004: Figure 4.19])

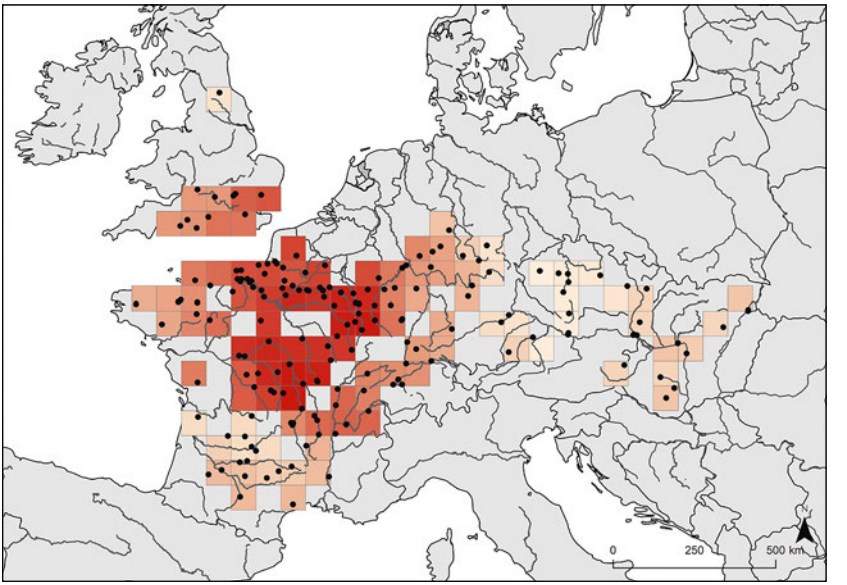
https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Monumentality of perimeter infrastructure

The extraordinary size of perimeter infrastructure in enclosed forms of low-occupation-density settlement presents the possibility that these settlements themselves, taking a broader scale view, could also be regarded as monuments. They were typically highly salient, materially permanent, large in scale, and required a significant investment of resources and labor for construction and maintenance (cf. Brunke et al. 2016: 255). Moreover, with one exception, the site of Co Loa (Dongson culture ca. 300 BCE-100 CE) in northern Vietnam, they did not occur in isolation within their regions, but were embedded in extensive regional and supra-regional networks of interaction. In Europe, the enclosure of settlements, particularly in elevated positions like hilltops, appeared at intervals from the Neolithic period onwards (Fernández-Götz 2014: 386). However, the behavior of enclosing and monumentalizing even very large settlements such as the extraordinary Corneşti-Iarcuri (1780 ha ca. 1400–1000 BCE) in the Banat region of modern Romania appears to date from the middle Bronze Age (Heeb et al. 2017). During the Iron Age, this type of settlement construction proliferated with the Scythian gorodishche to the east (ca. 700–300 BCE) and the Hallstatt (ca. 600–300 BCE) Fuerstensitz in the centre and west. By the late La Tène period (ca. 200 BCE-30 CE), construction of oppida as a monumental settlement form (Fernández-Götz 2014) was a frequent behavior across central and western Europe. While acknowledging that the local socio-economic and political functions of these settlements and their internal materiality was diverse (Woolf 1993; Moore 2017), the formation processes of many of these enclosed settlements suggest that the significant non-verbal component of their regional operation was monumentality. Many of the largest, such as the oppidum of Heidengraben bei Grabenstetten (1660 ha) in southern Germany or the Scythian gorodishche of Belsk (4020 ha) were plateau enclosures with extensive amounts of open space. For the European oppida in particular, this close relationship between site position, topography, and enclosed extent was an integral characteristic of their morphology at all sizes (Fichtl/Pierrevelcin 2012: 17). Their distribution across central and western Europe typically followed major rivers (Figure 6). Punctuating these river highways, they were highly circumscribing of approach and egress behaviors. The effect of enclosure and saliency of these settlements as monuments was to potentially change the pace of movement and order interaction, regardless of other verbalized meaning, on a regional scale, and this ordering principle was replicated settlement by settlement across vast territories.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 6: Linear cluster distribution patterns of Iron Age European oppida (Hot spot, Getis-Ord GI analysis for clustering conducted in ArcGIS 10.5; rivers from Andreadis et al. [2013])*



Extending monumentality across regions

By extension, in some regions, such as the Iron Age Scythian territories in Eastern Europe, or across the European Atlantic Neolithic, multiple types and scales of regional monument construction were not only componential to settlement development but extended across larger areas of landscape. Scythian kurgan (mound) burials dated to between around 800 and 300 BCE are an enduring feature from the eastern Eurasian steppe to the Danube river (van Geel et al. 2004). These monuments are frequently distributed in linear patterns along watersheds and ridges (Sulimirski et al. 1992: 550), but in a similar spatial pattern to the Hallstatt Fuerstensitz, they were also concentrated around Gorodishche in vast cemeteries. At the settlement of Belsk between the Suchaja-Grunt and Vorskla rivers in modern Ukraine, cemeteries of kurgans extended the monumental walled settlement which was already around 4020 ha out to around 8000 ha of occupied territory. These integrated regional monument and settlement systems were also a feature of Atlantic European Neolithic and early Bronze Age complexes such as at Brodgar/Stenness on Mainland Island, Orkney, greater Stonehenge in southern Britain and Brú na Bóinne in County Meath, Ireland. In the British Iron Age, under different political and economic conditions, territorial oppida such as Camulodu-

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

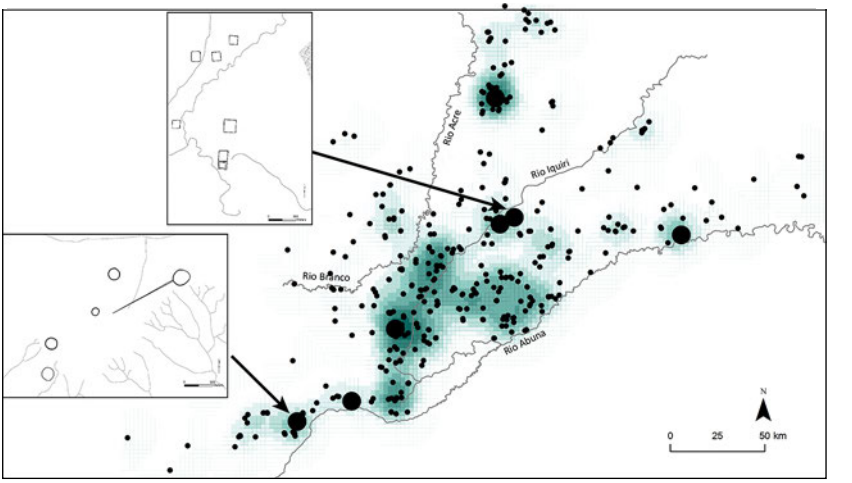
num (2000 ha) segregated large expanses of agricultural land and habitation by the construction of many kilometers of linear ramparts and ditches across landscape on a monumental scale (Hawkes/Crummy 1995).

This pattern of nesting extensive zones of occupation into landscapes of monuments is also a feature of regions in the tropical world. Operating within continuously modified landscapes, these settlement forms challenge our notions of what constitute settlement boundaries. An extreme example is that of the landscapes of the Llanos de Moxos in Bolivia where mounds, anthropogenic forest islands, and raised field complexes are connected to each other through canals and pathways constituting a richly networked fabric of which monumentality is a significant part (Lombardo/Prümers 2010: 1883). A similar pattern of landscape integration including monument is a feature of the Barinas region of the Venezuelan llanos with extensively integrated mound sites including the causewayed enclosure settlement of El Cedral (E33) at around 150 ha (Redmond/Spencer 2007) embedded in a network of causeways extending over roughly 448 km² (Redmond/Gassón/Spencer 1999: 121–122). These integrated landscape-scale operations are also evident at the Hertenrits Mound complex in coastal French Guiana where mounds and their associated raised field and aquaculture complexes are also connected over a hierarchical system of pathways and canals extending out over many kilometers (Rostain 2008: 288–289). In eastern Acre state, Brazil, in southwestern Amazonia, clusters of geometric earthwork enclosures often connected by roadways have been revealed by forest clearance over a region of some 47,000 km² between the Acre and Abunã rivers (Figure 7). The construction and use of these earthworks appears to have continued over a long period of time between around 1000 BCE to 1400 CE (Saunaluoma/Schaan 2012: 1). These earthworks do not enclose material evidence of occupation but there are possible habitation mounds and raised field systems in association, suggesting that they were elements of settlement, although the contemporaneity of these features is yet to be understood (Saunaluoma 2012: 575).

These types of landscape-scale, connective features in tropical zones are distinctly related to water management and access (Erickson 2008: 172–173) but there are examples of unbounded patterns of continuous distribution of features on a monumental scale in other types of environments. Late Archaic occupation patterns in the Supe Valley in the coastal desert zones of western Peru, during the late Archaic period (ca. 3000–1800 BCE) suggest that this valley may be considered a single settlement with continuous agricultural zones on the narrow strips either side of the river and dispersed zones of habitation and monuments on the terraces above. A large concentration of architectural mounds, plazas, and aggregated domiciles at the site of Caral towards the eastern extent of occupation indicates that this area was a focal point for the settlement (Shady 2006: 64), but the distribution of sites down the valley towards the ocean can be compared to the spatial

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 7: Distribution of geometric monuments in Acre State, Brazil (Location data from Jacobs [2017] with configurations potentially indicating settlement sites greater than 100 ha, identified through near neighbor analysis [Near neighbor and kernel density analyses conducted using ArcGIS 10.5.])



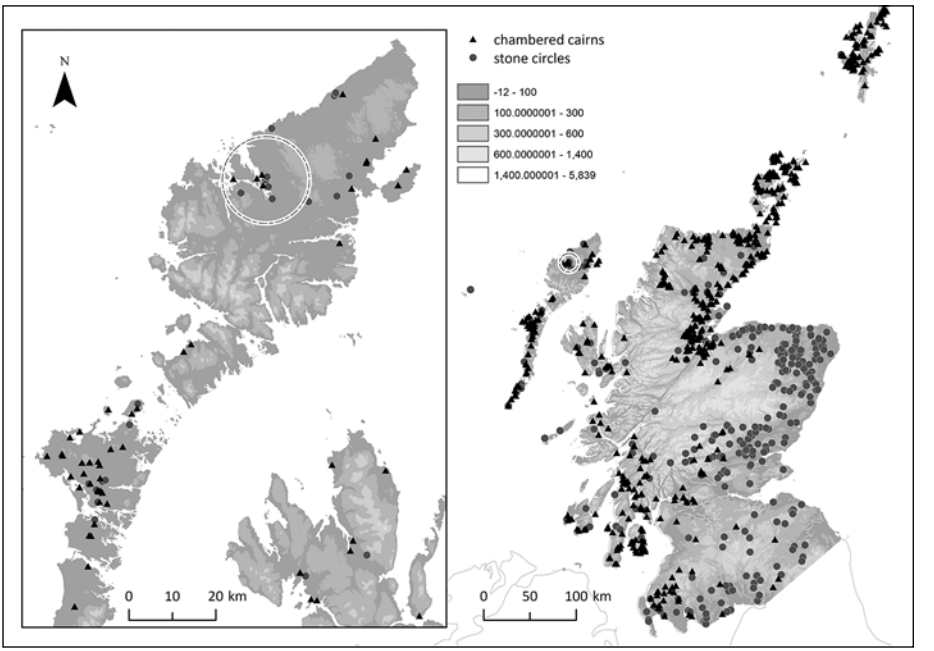
pattern of monumental great houses at the settlement of Chaco Canyon (ca. 850–1150 CE) in southwest USA. Furthermore, the distribution of contemporaneous occupation and monument building in the wider adjacent valleys of Fortaleza and Pativilca shows a far more dispersed pattern as well as several low-density-occupation settlements extending over more than 100 ha in themselves (Creamer et al. 2013; Creamer/Ruiz/Haas 2007).

On the Isle of Lewis in the Western Hebrides of Scotland (Figure 8), Late Neolithic (ca. 3000–2500 BCE) stone circle building on ridges overlooking east-west valleys across the island may be related to routeways from the east coast to the major monument complex of Callanish on Loch Roag (Richards/Challands/Welham 2013). Two potential overland and two Atlantic routeways into the complex have been identified by fieldwork and it would appear that the circles were placed for maximum visibility from the valley floors (Richards et al. 2013).

The Callanish monument group is comprised of nine separate stone circles and the unusual cruciform shaped monument at Callanish I with a small chambered tomb dated to slightly later (Armit 1996: 83). To the north of the site, a distribution of stone circles in elevated positions less than 3 km from the Atlantic coast supports other evidence of extensive interaction networks along the Atlantic façade dating from the Early Neolithic (ca. 4000/3700 BCE) (Cummings 2017: 40, 160) and particularly an "island centered geography" focused on sea travel proposed by Armit (1996: 6–7).

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Figure 8: Distribution of stone circles and chambered cairns across Scotland and on the Island of Lewis. The circle indicates a 10 km radius around the site of Callanish I. (Data from Historic Environment Scotland, 2018).



Overview of monument operation

From a non-particularist perspective the material forms of monument- and landscape-scale features in these regions had low morphological diversity. There were, of course, local variations, but the large, low-density settlements formed within long trajectories of settlement building traditions and material cultures which had had time to locally diversify but remained strongly interconnected. As slow changing components of these landscapes, monuments appear to have been highly successful as faciliatory mechanisms for repeated region-scale interaction, creating and maintaining highly stable locational systems within which large groups had time and space to form. Local diversity in material outcomes was bounded by a regionally shared set of architectural and spatial values (Armit 1996). These types of non-verbal messages encoded in monumental-scale building operated over longer periods of time than local change (Bradley 1993: 91). The replication of this non-verbal component of a signal perhaps could be characterized as some form of "normative pressure" (DiMaggio/Powell 1983: 152) in the language of institutional isomorphism, acknowledging a shared cognitive base for the iter-

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

ation of specific spatial and material patterns in generationally perpetuated skill sets. Clark Erickson (2008: 161), working with communities in the Andes and Amazon, expressed this stability in an experiential way, noting that people in these areas spent more time out in the landscape than in their domestic zones and that these investments in 'landscape capital' forged strong intergenerational systems of material and knowledge which ordered the interactions and behaviors of populations over long periods of time.

As an operational characteristic of settlement and regions, this kind of isomorphism does not require or indicate any particular form of economic or social structure. Shared spatial and material principles are essentially carried with verbal messaging of any type because they represent a "basal grammar" (Fletcher 1995: 31) for behavior. While many of these settlements had agrarian economic bases, for example, there are sites such as Poverty Point in the Mississippi delta dating to the Late Archaic period (ca. 1600–1250/900 BCE) which were associated with a hunting-gathering economic system and high population mobility (Kidder 2011: 118). The required energetic input for the rapid construction of the largest of the mounds, Mound A, with a total volume of around 238,500 m^3 of earth (Kidder et al. 2009: 116), is comparable to almost any of the more sedentary agrarian sites. In other parts of the world, such as Late Neolithic China, monumental architecture is associated with 'elite' residence and burial, but not exclusively. There is no evidence that the organization of labor at these sites was coercive. Rather, the construction of platform and rampart structures were the outcomes of locally patterned behaviors which continued, in the case of Taosi, with the abandonment and destruction of the 'elite' residence forms (He 2013: 269–270). Some of the most striking examples of monumental architecture in this set of sites are the stone-built enclosures at Great Zimbabwe. The energetic requirements for constructing the hill complex were potentially between 32,400 and more than 200,000 person hours, depending on how granite blocks from quarries up to 4.8 km away (Hall 1905) were transported to the site. The bulk of this expenditure, however, was distributed over around 100 years in additions and modifications between 1200 and 1310 CE (Chipunza 1994). With very low permanent populations (Chirikure et al. 2017), this mode of construction does not imply complex mechanisms for organizing labor, but ongoing expressions of a basal grammar for settlement construction over hundreds of years.

Monumental structures and iterative construction elements have the potential to foster material and spatial coherence at multiple scales, ordering settlement and cultural territories across vast landscape. This is not to say that each monument construction was not a unique process with its own meaning, but that the cumulative effect of these large-scale constructions was the creation of landscapes and settlements with predictable constraints on behavior which were perpetuated over hundreds of years. While the formation processes of monuments

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

were varied from single events to palimpsests of addition and modification over time, the effect of repeated interaction with them was to stabilize specific places in landscape and by visibility or memory of visibility, to interconnect these stabilization points. The issue of monumental perimeter walling is somewhat different. In many cases, the enclosing of a settlement with monumental walling effectively monumentalized the settlement itself within the landscape. These distributions of monuments across broader landscapes suggest that some regional mobility was a frequent condition of these settlements. Moving beyond the understanding of monuments as ontologically isolated and epiphenomena of the social world, the problematic binary of particularist/generalist can be addressed by observing monuments in operational terms.

Acknowledgements

We would like to thank the Excellence Cluster Topoi (B-2) XXL for the opportunity to participate in the discussion forum "Size Matters". Our especial thanks to Eva Cancik-Kirschbaum and Felix Levenson. Thanks also to the Carlyle Greenwell bequest, the Postgraduate Award scheme of the Australian Federal Government and the University of Sydney for providing facilities and support for research. Finally, thanks to Professor Roland Fletcher for his generous help and advice, and Dr Rosemary Whitecross, Dr Bernhard Heeb, Dr Natalie Blake and Mr Ben Dharmendra for suggestions, friendship and great discussions on this work.

Bibliography

Andreadis, K./Schumann, G./Pavelsky, T. (2013): "A Simple Global River Bankfull Width & Depth Database", http://gaia.geosci.unc.edu/rivers/ (last accessed January 3, 2016).

Armit, I. (1996): The Archaeology of Skye and the Western Isles, Edinburgh: Edinburgh University Press.

Bradley, R. (1993): Altering the Earth. The Origins of Monuments in Britain and Continental Europe, Monographs of the Society of Antiquaries of Scotland, Edinburgh: Society of Antiquaries of Scotland.

Bradley, R./Chambers, R. (1988): "A new study of the cursus complex at Dorchester on Thames." In: Oxford Journal of Archaeology 7/3, pp. 271–289.

Brunke, H./Bukowiecki, E./Cancik-Kirschbaum, E./Eichmann, R./van Ess, M./Gass, A./Gussone, M./Hageneuer, S./Hansen, S./Kogge, W./May, J./Parzinger, H./Pedersén, O./Sack, D./Schopper, F./Wulf-Rheidt, U./Ziemssen, H. (2016): "Thinking Big. Research in Monumental Constructions in Antiquity." In: G.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Graßhoff/M. Meyer (eds.), Space and Knowledge. Topoi Research Group Articles, eTopoi. Journal for Ancient Studies, Special Volume 6, Berlin: Edition Topoi, pp. 250–305.

Caraher, W. (2016): "Ontology, World Archaeology, and the Recent Past." In: American Journal of Archaeology 120/2, pp. 325–331.

Chapman, J./Videiko, M. Y./Gaydarska, B./Burdo, N./Hale, D. (2014): "Architectural differentiation on a Trypillia mega-site: preliminary report on the excavation of a mega-structure at Nebelivka, Ukraine." In: Journal of Neolithic Archaeology 4, pp. 135–157.

Chipunza, K. T. (1994): A diachronic analysis of the architecture of the Hill Complex at Great Zimbabwe, Uppsala: Societas Archaeologica Upsaliensis.

Chirikure, S./Moultrie, T./Bandama, F./Dandara, C./Manyanga, M. (2017): "What was the population of Great Zimbabwe (CE 1000–1800)?" In: PLoS One doi:10.1371/journal.pone.0178335.

Clarke, D. L. (1973): "Archaeology: the loss of innocence." In: Antiquity 47/185, pp. 6–18.

Creamer, W./Rubio, A. R./Perales Munguia, M. F./Haas, J. (2013): "The Fortaleza Valley, Peru: archaeological investigation of Late Archaic sites (3000–1800 BC)." In: Fieldiana Anthropology N. S. 44, pp. 1–108.

Creamer, W./Ruiz, A./Haas, J. (2007): "Archaeological investigation of Late Archaic sites (3000–1800 B. C.) in the Pativilca Valley, Peru." In: Fieldiana Anthropology N. S. 40, pp. 1–79.

Cummings, V. (2017): The Neolithic of Britain and Ireland, London; New York: Routledge.

DiMaggio, P. J./Powell, W. W. (1983): "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." In: American Sociological Review 48/2, pp. 147–160.

Erickson, C. L. (2008): "Amazonia: The historical ecology of a domesticated landscape." In: H. Silverman/W. Isbell (eds.), The Handbook of South American Archaeology, Berlin: Springer Science + Business Media, LL, pp. 157–183.

Fernández-Götz, M. (2014): "Reassessing the Oppida: The Role of Power and Religion." In: Oxford Journal of Archaeology 33/4, pp. 379–394.

Fichtl, S./Pierrevelcin, G. (2012): Les Premières Villes de Gaule: Le temps des oppida celtiques, Lacapelle-Marival: Editions Archéologie Nouvelle.

Fletcher, R. (1995): The Limits of Settlement Growth: A Theoretical Outline, Cambridge: Cambridge University Press.

Hall, R. N. (1905): "Ancient Architecture at Great Zimbabwe (Rhodesia)." In: The British Architect 63/15, pp. 265–267.

Hardy, T. (1891): Tess of the D'Urbervilles, London: Macmillan.

Hawkes, C. F. C./Crummy, P. (1995): Colchester Archaeological Report 11: Camulodunum 2. Colchester: Colchester Archaeological Trust Ltd.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

He, N. (2004): "Monumental Structure from Ceremonial Precinct at Taosi Walled-town in 2003 (Summary of original report from Kaogu 考古 2004, 7, 9-24 by Shanxi Fieldwork Team of the Institute of Archaeology, Chinese Academy of Social Sciences, Shanxi Provincial Institute of Archaeology and Linfen Municipal Administrative Bureau of Cultural Relics)." In: Chinese Archaeology 5, pp. 51–58.

He, N. (2009): "Large-sized Rammed-earth Building Foundations of the Middle Taosi Culture Discovered on the Taosi City-site in Xiangfen County, Shanxi (summary from original report in考古2008, 3: 3-6 by He, N., Gao, J. & Wang, X.)." In: Chinese Archaeology 9, pp. 86–89.

He, N. (2013): "The Longshan period site of Taosi in southern Shanxi province." In: A. P. Underhill (ed.), A Companion to Chinese Archaeology, Chichester: Blackwell Publishing Ltd, pp. 255–277.

Heeb, B. S./Szentmiklosi, A./Bălărie, A./Lehmpuhl, R./Krause, R. (2017): "Corneşti-Iarcuri – 10 years of research (2007–2016). Some important preliminary results." In: B. S. Heeb/A. Szentmiklosi/R. Krause/M. Wemhoff (eds.), Fortifications: The Rise and Fall of Defended Sites in Late Bronze and Early Iron Age of South-East Europe, Berlin: Staatliche Museen zu Berlin, pp. 217–228.

Historic Environment Scotland (2018): "Canmore database", https://www.historicenvironment.scot/archives-and-research/archives-and-collections/canmore-database/ (last accessed March 1, 2018).

Hodder, I. (1992): Theory and Practice in Archaeology, London; New York: Routledge.

Jacobs, J. Q. (2017): "Hundreds of Geoglyphs Discovered in the Amazon", http://www.jqjacobs.net/archaeology/geoglyph.html (last accessed September 25, 2017).

Kelly, J. E. (2002): "The Pulcher Tradition and the Ritualization of Cahokia: A Perspective from Cahokia's Southern Neighbor." In: Southeastern Archaeology 21/2, pp. 136–148.

Kidder, T. R. (2011): "Transforming Hunter-Gatherer History at Poverty Point." In: K. E. Sassaman/D. H. Holly (eds.), Hunter-Gatherer Archaeology as Historical Process, Tucson: The University of Arizona Press.

Kidder, T. R./Arco, L. J./Ortmann, A. L./Schilling, T./Boeke, C./Bielitz, R./Adelsberger, K. A. (2009): Poverty Point Mound A: Final Report of the 2005 and 2006 Field Seasons, Baton Rouge: Louisiana Division of Archaeology and the Louisiana Archaeological Survey and Antiquities Commission.

Lombardo, U./Prümers, H. (2010): "Pre-Columbian human occupation patterns in the eastern plains of the Llanos de Moxos, Bolivian Amazonia." In: Journal of Archaeological Science 37/8, pp. 1875–1885.

Manyanga, M./Pikirayi, I./Chirikure, S. (2010): "Conceptualising the Urban Mind in Pre-European Southern Africa: Rethinking Mapungubwe and Great Zimbabwe." In: P. J. J. Sinclair/G. Nordquist/F. Herschend/C. Isendahl (eds.), The

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Urban Mind: Cultural and Environmental Dynamics, Uppsala: African and Comparative Archaeology, Department of Archaeology and Ancient History, Uppsala University.

Moore, T. (2012): "Beyond the Oppida: Polyfocal Complexes and Late Iron Age Societies in Southern Britain." In: Oxford Journal of Archaeology 31/4, pp. 391–417.

Moore, T. (2017): "Beyond Iron Age 'Towns': Examining Oppida as Examples of Low Density Urbanism." In: Oxford Journal of Archaeology 36/3, pp. 287–305.

Morgan, W. N. (1999): Precolumbian Architecture in Eastern North America, Gainesville: University Press of Florida.

Morton, F. (2013): "Settlements, landscapes and identities among the Tswana of the western Transvaal and eastern Kalahari before 1820." In: The South African Archaeological Bulletin 68/197, pp. 15–26.

Nunez Regueiro, V. A. (1970): "The Alamito Culture of Northwestern Argentina." In: American Antiquity 35/2, pp. 133–140.

Olsen, B. (2010): In Defense of Things: Archaeology and the Ontology of Objects, Lanham, New York, Toronto; Plymouth: Altamira Press.

Ortman, S. G./Cabaniss, A. H./Sturm, J. O./Bettencourt, L. M. (2014): "The pre-history of urban scaling." In: PLoS One 9/2, doi:10.1371/journal.pone.0087902.

Osborne, J. F. (ed.) (2014): Approaching Monumentality in Archaeology, IEMA Proceedings, Albany: State University of New York Press.

Osborne, J. F. (2017): "Counter-monumentality and the vulnerability of memory." In: Journal of Social Archaeology 17/2, pp. 163–187.

Pauketat, T. R./Alt, S. M./Kruchten, J. D. (2017): "The Emerald Acropolis: elevating the moon and water in the rise of Cahokia." In: Antiquity 91/355, pp. 207–222.

Qin, L. (2013): "The Liangzhu Culture." In: A. P. Underhill (ed.), A Companion to Chinese Archaeology, Chichester: Wiley Blackwell.

Radivojević, M./Rehren, T./Pernicka, E./Šljivar, D./Brauns, M./Borić, D. (2010): "On the origins of extractive metallurgy: new evidence from Europe." In: Journal of Archaeological Science 37/11, pp. 2775–2787.

Redmond, E. M./Gassón, R. A./Spencer, C. S. (1999): "A Macroregional View of Cycling Chiefdoms in the Western Venezuelan Llanos." In: Archeological Papers of the American Anthropological Association 9/1, pp. 109–129.

Redmond, E. M./Spencer, C. S. (2007): Archaeological Survey in the High Llanos and Andean Piedmont of Barinas, Venezuela, New York: American Museum of Natural History.

Renfrew, C. (1973): "Monuments, mobilisation and social organisation in Neolithic Wessex." In: C. Renfrew (ed.), The explanation of culture change: models in prehistory: proceedings of a meeting of the Research Seminar in Archaeology and Related Subjects held at the University of Sheffield, London: Duckworth, pp. 539–558.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Richards, C./Challands, A./Welham, K. (2013): "Erecting stone circles in a Hebridean landscape." In: C. Richards (ed.), Building the Great Stone Circles of the North, Oxford: Oxbow Books, pp. 201–223.

Richards, C./Demetri, G./French, C./Nunn, R./Rennell, R./Robertson, M./Wellerman, L./Wright, J. (2013): "Expedient monumentality: Na Dromannan and the high stone circles of Calanais, Lewis." In: C. Richards (ed.), Building the Great Stone Circles of the North, Oxford: Oxbow Books, pp. 224–253.

Rostain, S. (2008): "The archaeology of the Guianas: an overview." In: H. Silverman/W. Isbell (eds.), Handbook of South American Archaeology, New York: Springer, pp. 279–302.

Saunaluoma, S. (2012): "Geometric earthworks in the state of Acre, Brazil: excavations at the Fazenda Atlântica and Quinauá Sites." In: Latin American Antiquity 23/4, pp. 565–583.

Saunaluoma, S./Schaan, D. (2012): "Monumentality in western Amazonian formative societies: geometric ditched enclosures in the Brazilian state of Acre." In: Antiqua 2/e1, pp. 1–11.

Schaan, D. (2004): "The Camutins Chiefdom: Rise and Development of Social Complexity on Marajó Island, Brazilian Amazon." Ph. D. Thesis, Pittsburgh, Pennsylvania: University of Pittsburgh.

Shady, R. (2006): "La civilización Caral: sistema social y manejo del territorio y sus recursos. Su transcendencia en el proceso cultural andino." In: Boletín de Arqueología PUCP 10, pp. 59–89.

Shanks, M./Tilley, C. (1987): Re-Constructing Archaeology: Theory and Practice, Cambridge: Cambridge University Press.

Silliman, S. (2001): "Agency, practical politics and the archaeology of culture contact." In: Journal of Social Archaeology 1/2, pp. 190–209.

Steyn, G. (2011): "The spatial patterns of Tswana stone-walled towns in perspective." In: South African Journal of Art History 26/2, pp. 101–125.

Sulimirski, T./Taylor, T./Boardman, J. (1992): "The Scythians." In: I. E. S. Edwards/E. Sollberger/N. G. L. Hammond (eds.), The Cambridge Ancient History, Cambridge: Cambridge University Press, pp. 547–590.

Thomas, J. (1999): Understanding the Neolithic, London: Routledge.

van Geel, B./Bokovenko, N. A./Burova, N. D./Chugunov, K. V./Dergachev, V. A./Dirksen, V. G./Kulkova, M./Nagler, A./Parzinger, H./van der Plicht, J./Vasiliev, S. S./Zaitseva, G. I. (2004): "Climate change and the expansion of the Scythian culture after 850 BC: a hypothesis." In: Journal of Archaeological Science 31/12, pp. 1735–1742.

White, K. M. (n. d.): "A global comparison of low occupation density settlement behaviour in prehistory" (working title) Ph. D. thesis in preparation, Sydney: The University of Sydney.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

Woolf, G. (1993): "Rethinking the Oppida." In: Oxford Journal of Archaeology 12/2, pp. 223–234.

Yang, X. (2004): New Perspectives on China's Past: Chinese Archaeology in the Twentieth Century, 2 vols, vol. 2, New Haven; London: Yale University Press.

Zhang, C. (2013): "The Qujialing-Shijiahe Culture in the Middle Yangzi River Valley." In: A. P. Underhill (ed.), A Companion to Chinese Archaeology, Chichester; Malden: Wiley-Blackwell, pp. 510–534.

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND

https://doi.org/10.14361/9783839445389-011 https://www.inlibra.com/de/agb - Open Access - (cc) BY-NC-ND