

Central Lancashire Online Knowledge (CLOK)

Title	Enclosing the Neolithic World: A Vinča Culture Enclosed and Fortified Settlement in the Balkans
Type	Article
URL	https://clock.uclan.ac.uk/id/eprint/21446/
DOI	https://doi.org/10.1086/697534
Date	2018
Citation	Borić, D, Hanks, B, Sljivar, D, Doonan, R, Kocic, M, Bulatovic, J, Griffiths, Seren and Jacanovic, D (2018) Enclosing the Neolithic World: A Vinča Culture Enclosed and Fortified Settlement in the Balkans. <i>Current Anthropology</i> , 59 (3). ISSN 0011-3204
Creators	Borić, D, Hanks, B, Sljivar, D, Doonan, R, Kocic, M, Bulatovic, J, Griffiths, Seren and Jacanovic, D

It is advisable to refer to the publisher's version if you intend to cite from the work.
<https://doi.org/10.1086/697534>

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLOK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

Report

Enclosing the Neolithic World

A Vinča Culture Enclosed and Fortified Settlement in the Balkans

Dušan Borić, Bryan Hanks, Duško Šljivar, Miroslav Kočić, Jelena Bulatović, Seren Griffiths, Roger Doonan, and Dragan Jacanović

Italian Academy for Advanced Studies in America, Columbia University, 1161 Amsterdam Avenue, New York, New York 10027, USA (db2128@columbia.edu) (Borić)/Department of Anthropology, University of Pittsburgh, #3113 WWPB, 230 South Bouquet Street, Pittsburgh, Pennsylvania 15260, USA (Hanks and Kočić)/National Museum Belgrade, Trg Republike 1, 11000 Belgrade, Republic of Serbia (Šljivar)/Laboratory for Bioarchaeology, Faculty of Philosophy, University of Belgrade, Čika Ljubina 18–20, 11000 Belgrade, Republic of Serbia (Bulatović)/School of Forensic and Applied Sciences, University of Central Lancashire, Preston, Lancashire PR1 2HE, United Kingdom (Griffiths)/Department of Archaeology, University of Sheffield, Minalloy House, 10–16 Regent Street, Sheffield S1 3NJ, United Kingdom (Doonan)/National Museum in Požarevac, Dr Voje Dulića 10–12, 12000 Požarevac, Republic of Serbia (Jacanović). This paper was submitted 29 I 17, accepted 10 X 17, and electronically published 3 IV 18.

Online enhancements: supplementary material

Interpretations of prehistoric enclosures worldwide have varied from those that see the primary role of enclosures as defensive features to others that explore the symbolic, ritual, social, and ideological dimensions of separating space into an inside, an outside, and an in-between. Such evidence and interpretative accounts are inevitably linked to wider anthropological discussions on modes of social interaction and reproduction in the past, whether altruistic or predatory, and evolutionary narratives regarding changes in the level of intergroup violence over the course of human history. Growing evidence indicates that many Neolithic settlements in Europe were enclosed by a complex system of ditches, ramparts, and palisades. We present a case study from the central Balkans at the Neolithic Vinča culture site of Oreškovića-Selište in Serbia, dated to the last centuries of the sixth millennium BC, where recent geophysical surveys, stratigraphic excavation, and accelerator mass spectrometry dating document the existence of

an early enclosed settlement with multiple enclosure features. We interpret these features as defensive and discuss the social dynamics that led to the founding and abandonment of this short-lived occupation in the context of other contemporaneous settlements in the Balkans.

Up to the 1990s, a pervasive view was that Neolithic communities in Europe and farther afield were peaceful and sedentary. This narrative was especially argued for by Marija Gimbutas (e.g., Gimbutas 1991), who starkly contrasted this “matriarchal” world of “Old Europe,” dominated by “Mother Goddess” worship (with overt New Age sentiments) to the subsequent arrival of mobile, warrior-like, horse-riding communities from the east, which Gimbutas equated with waves of Indo-Europeans and their largely “patriarchal” social structure. This narrative of a peaceful Neolithic existence began to be questioned on the basis of two kinds of evidence. First, there were mounting indications of both fatal and healed traumas caused by violent interpersonal conflict, including mass burial sites of massacred victims (e.g., in Talheim, Germany [Wahl and Trautmann 2012]; Schöneck-Kilianstädten, Germany [Meyer et al. 2015]; and Esztergályhorváti, Hungary [Barna 1996]). Second, evidence of enclosed Neolithic-period settlements with possible defensive features also became widely documented (e.g., Ivanova 2008; Keely, Fontana, and Quick 2007; Parkinson and Duffy 2007). While systematic and extensive geophysical surveys were not common in the past, routine geophysical prospection work over the past decade at many sites across southeastern Europe has produced robust evidence that fortification features were an almost common element in most, if not all, Late Neolithic settlements (e.g., Müller et al. 2013; Parkinson et al. 2010). The same is true of the recent work on the Vinča culture taxonomic unit found in the north-central Balkans, which covers a period of more than 800 years (ca. 5,300–4,500 cal BC) in the central and northern areas of the peninsula (e.g., Borić 2009, 2015; Chapman 1981; Chapman, Gaydarska, and Hardy 2006; Crnobrnja 2012; Medović et al. 2014; Perić et al. 2016; Schier 2008).

Enclosed settlements, with their origins in southeastern Europe, became an important feature in the layout of Neolithic settlements across Europe and endured for much of Late European Prehistory (e.g., Müller 2014; Parkinson and Duffy 2007). Based on their review of the evidence for fortifications and enclosures during the European Neolithic and Bronze Age, Parkinson and Duffy (2007:100) suggest that the appearance of enclosures and fortifications “was associated with the formalized representation of segmentary social units on the landscape,” also reflecting intergroup dynamics. It also has been argued that, in a presumed dominantly egalitarian context of agricultural Neolithic groups in Europe, large communal works—such as those involved in the digging of deep ditches and building of palisades, or even in intentional and simulta-

neous burning of building structures within settlements—brought community members together and acted to create solidarity, cohesive social bonds, and the sense of belonging to a particular community (Borić 2015).

There has been an extensive debate in different regional contexts as to whether, on the one hand, ditches, palisades, and various combinations of different types of enclosure features were parts of defensive fortifications that directly reflect periods characterized by heightened levels of violence (e.g., Arkush and Stanish 2005; Keely 1996; Keely, Fontana, and Quick 2007) or whether, on the other hand, the existence of such features should predominantly be seen as having symbolic, ritual, or ideological purposes in delineating an inside versus an outside and epitomizing a liminal space (e.g., Andersen 1997; Coudart 1991; Whittle 1996). This debate also mirrors debates regarding whether the phenomenon of house burning in southeastern Europe was intentional, structured, and ritual or the consequence of violent raids (e.g., Stevanović 1997). Hence the question has been asked regarding the existence of “ritual battles” and “ritual combat” as opposed to “real war.” These differences or preferences in interpretation may reflect post–World War II tendencies to pacify the prehistoric past (Keely, Fontana, and Quick 2007:56). However, they also reflect wider anthropological debates on the social philosophy of exchanges and relationality in which some authors emphasize an altruistic feature of exchange and conviviality (e.g., Overing and Passes 2000; Santos Granero 2000). Other scholars have stressed predatory and cannibalistic modes of interaction as a central trope of certain groups through the action of building and constituting particular social worlds (e.g., Fausto 2012; Viveiros de Castro 2011). As Descola (2013:337, 425n4) emphasizes, different approaches to sociability are not mutually exclusive, and the task becomes the identification of dominant and changing modes of relationality on the basis of the particular set of empirical evidence at hand.

Vinča Culture

The Middle to Late Neolithic in the northern and central Balkans is epitomized by “the Vinča culture” taxonomic unit. The emergence of Vinča groups and the formation of a shared social network with a high degree of similarities in material culture styles is strongly associated with population nucleation at tells, “tell-like” settlements, and flat settlements and new forms of craft production in the form of dark burnished ceramics, figurines often displaying mask-like triangular faces, and the development of copper metallurgy, among other crafts (e.g., Borić 2009, 2015; Chapman 1981; Orton 2012; Whittle et al. 2016). The widespread spatial distribution of these crafts suggests the establishment of shared social networks and intraregional trade routes among the descendants of the earliest agrarian communities of southeastern Europe. Based on the evidence from the type-site of Vinča-Belo Brdo, a simplified chronological scheme divides the Vinča culture into four phases based on the stratigraphy of the type-site: Vinča A (ca. 5400/

5300–5200 cal BC), Vinča B (ca. 5,200–5,000 cal BC), Vinča C (ca. 5,000/4,950–4,850 cal BC), and Vinča D (ca. 4,850–4,600/4,550 cal BC; Borić 2009, 2015; Tasić et al. 2016; Whittle et al. 2016).

A seemingly simultaneous disintegration of the tell-based existence over the western and central Balkans and the eastern Carpathian Basin took place around 4,600/4,500 cal BC, and a burnt building horizon marks the last Vinča culture occupation level at many sites (e.g., Borić 2009, 2015; Link 2006; Parkinson 2002; Tasić et al. 2016). In the ensuing Early Copper Age, settlement locations, material culture styles, and management of domestic stock see dramatic changes compared with the preceding period. Earlier models attempted to explain these changes either by evoking external causes of change, such as the arrival of new populations linked to conflict and the destruction of previous settlements, or by attributing change to internal social dynamics (for a review, see Borić 2015). For the Vinča culture area, the most dominant theory has been Tringham’s (1992) model, which argues that tensions and conflict in Late Neolithic Vinča villages toward the mid-fifth millennium BC were resolved by group fissioning and the establishment of new settlements with households, “houses,” or their social segments and members breaking away from the imposed constraints and power structure of tell or large “tell-like” settlements. In the long run, this might have led to the dissolution of the social network that held Vinča culture groups together. There has been an assumption among various authors that this process of disintegration of settlement at the end of the Late Neolithic around the mid-fifth millennium BC, which might have been linked to increased levels of intergroup conflict, was the main catalyst of the need for enclosures and fortifications (e.g., Link 2006). While some of the known enclosed features from several Vinča culture sites, such as Uivar in Romania (Schier 2008), are indeed dated to the late Vinča phases, there is evidence of several early Vinča enclosed sites based on pottery typologies (see Tripković 2013:199–238). Hence in the absence of sites with well-dated enclosure features, the question remains open as to what wider regional dynamic should be linked to the appearance of enclosed Neolithic sites and whether such sites might have appeared already from the beginning of the Vinča culture phenomenon in the second half of the sixth millennium BC. This situation brings into sharp focus our recent work at the Vinča culture site of Oreškovića-Selište in eastern Serbia.

Settlement Foundation, Fortification, and Abandonment at Oreškovića-Selište

The archaeological site of Oreškovića-Selište (lat 44°19′ 31.46″ N, long 21°19′ 11.10″ E) is located at a naturally raised low-lying hilltop at 209–211 m asl in the village of Oreškovića near the town of Petrovac na Mlavi in eastern Serbia (fig. 1). The site is found east of the Morava River Valley in the piedmont area within the drainage of the Mlava River and close to the Homolje Mountains, which are rich in copper mineralized ore

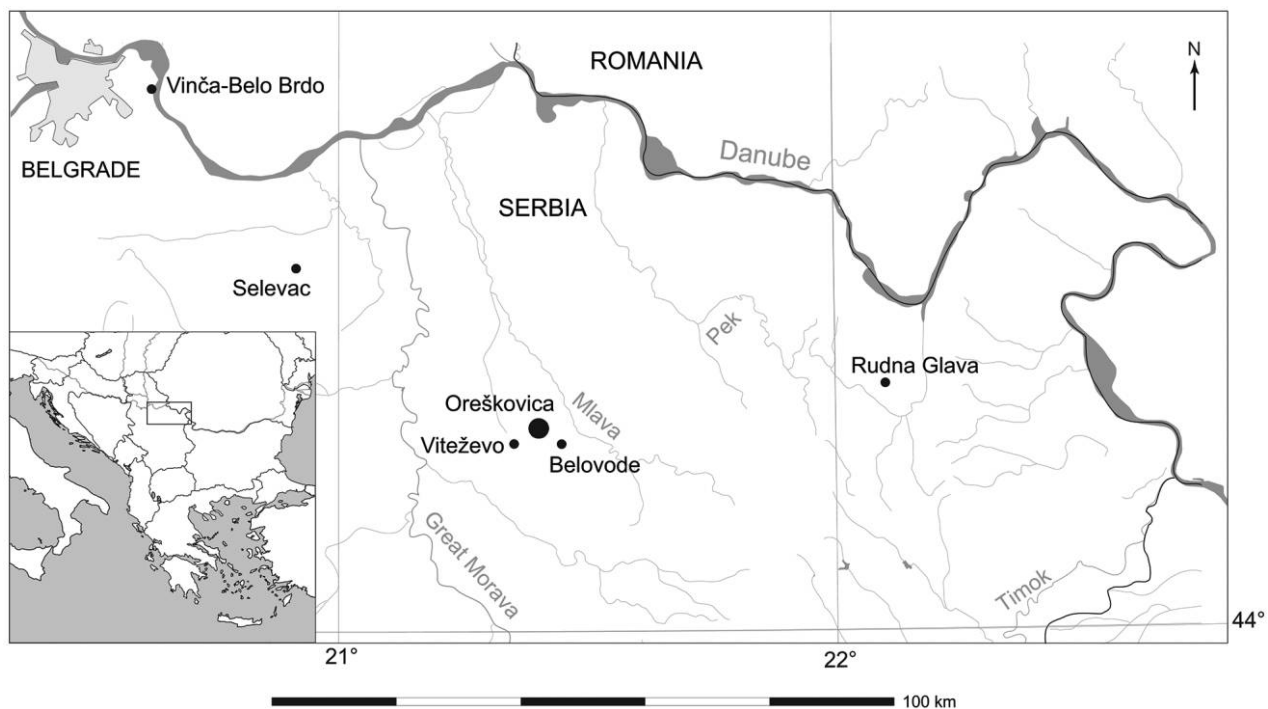


Figure 1. Map showing the distribution of Vinča culture settlement in the area of eastern Serbia (base map: Geographical Institute “Jovan Cvijić,” Serbian Academy of Sciences and Arts). A color version of this figure is available online.

deposits. There are several partly chronologically overlapping Vinča culture settlements in this regional context at a relatively close distance of several kilometers from Oreškovića-Selište. The best known is the site of Belovode, found at a distance of 6 km. Belovode can be considered a “megasite,” with a settlement spread of almost 90 ha (Šljivar, Kuzmanović, and Jakanović 2006) and a vertical sequence of up to 3.5 m that covers the complete duration of the Vinča culture (Borić 2009 and references therein).

A geophysical survey and excavations at Oreškovića-Selište were undertaken in 2013, 2014, and 2016 as part of a Serbian-British-American international collaborative research initiative, Vinča Archaeology and Metallurgy Project, the aim of which is to gain a better understanding of social processes leading to craft specialization, including the emergence of copper metallurgy, in an early agricultural society in the central Balkans. The chosen microregion is of particular importance due to its proximity to the best-known Neolithic copper mining site of eastern Serbia at Rudna Glava.

Geophysical Survey

More details on the geophysical survey approach and methodology are provided in supplement A (supplements A, B are available online). The southern zone of the settlement is situated on a sharper elevation change (fig. 2A). The principal goal of the surveys was to ascertain the overall site size and character of surrounding defensive works. The total enclosed

area of the prehistoric site is estimated at over 6.1 ha and includes multiple ditch and palisade features and likely entrance areas in the north, east, and west zones of the settlement (fig. 2A). Based on the results of the geophysical survey, an area in the northwestern zone of the settlement defensive works was selected for excavation and ground truthing of identified magnetic anomalies that were initially interpreted as ditch and palisade features (fig. 2B).

In addition, numerous dipolar and nondipolar magnetic anomalies were registered within the internal space of the settlement area. These are interpreted as a variety of domestic-activity-related features, such as pits (nondipolar), unburned house-pit constructions (nondipolar), and burned structures (dipolar; fig. 2B). In this paper, we focus more specifically on those geophysical anomalies relating to the enclosure system of the settlement.

Excavation of Enclosure Features and Settlement

In 2014, a 26-m-long and 1.5-m-wide transect (trench 1) was dug to establish the sequence of enclosure features at the northeastern extent of the settlement spread (fig. 2). Here, excavated features (fig. 3) comprised a large 3.6-m-deep (from the surface level) and 7-m-wide V-shaped outer ditch (feature 47; fig. 4); a rampart; a middle, smaller V-shaped ditch (feature 48), followed by a likely row of 1-m-wide and 1-m-deep postholes with decayed wooden post traces in the middle, likely representing a palisade (fig. 5); and a shallow inner ditch or pit

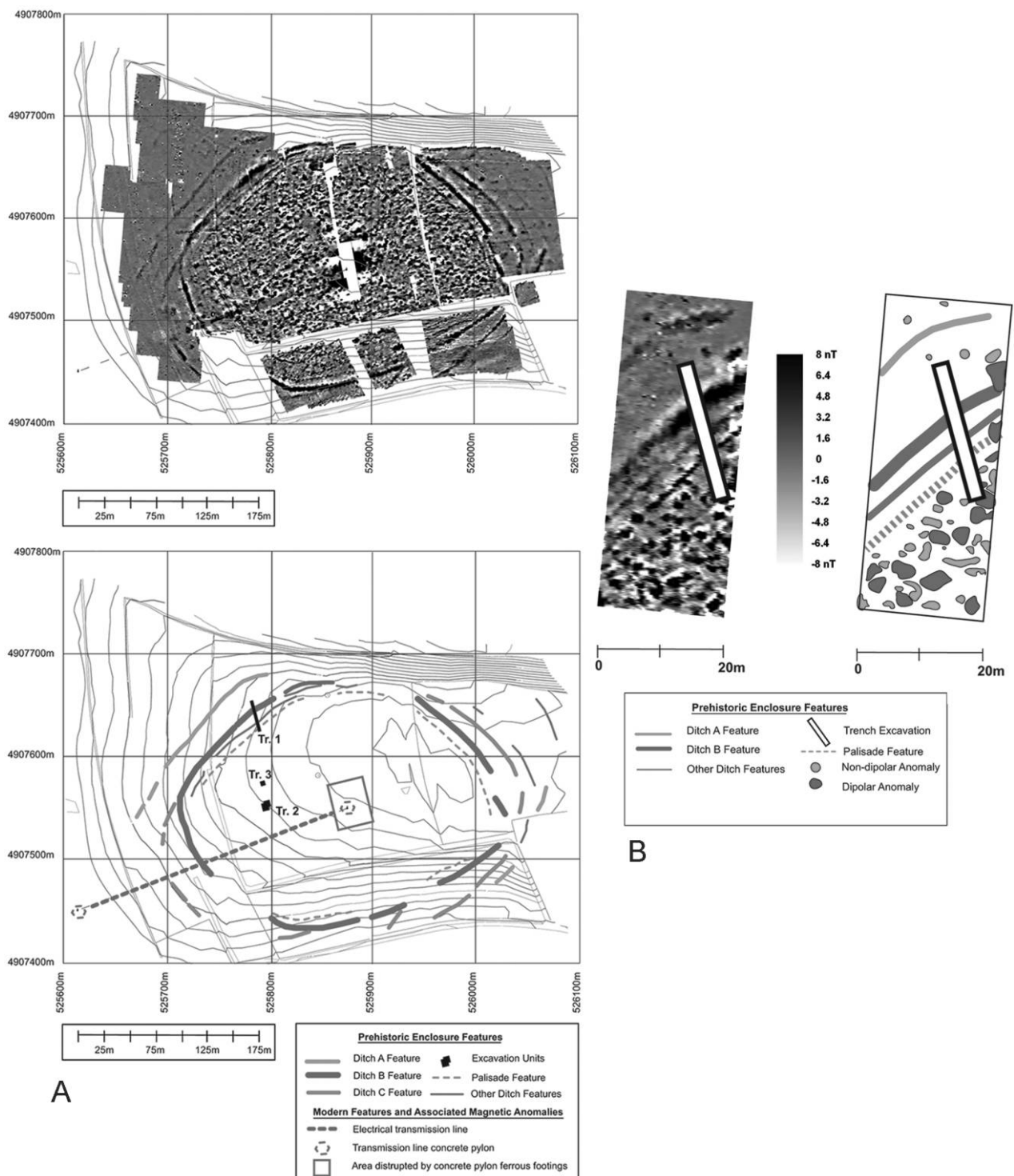
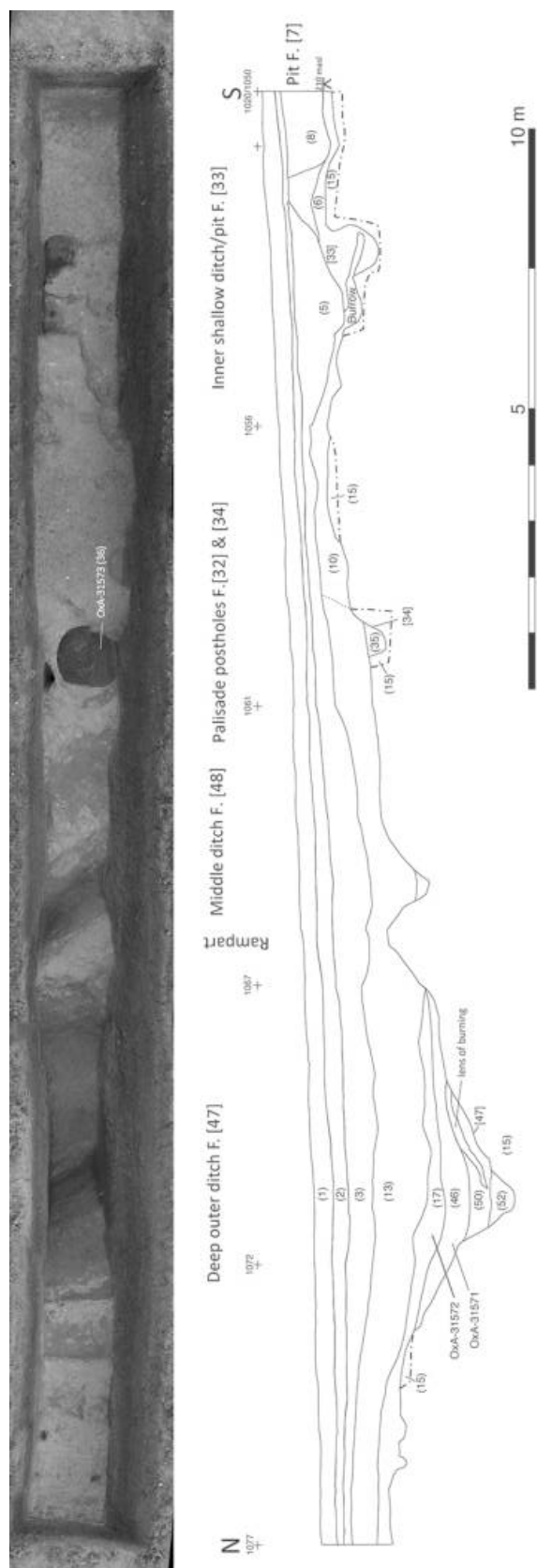


Figure 2. A, Fluxgate gradiometer survey data from the Oreškovića-Selište settlement (*top*) and interpretation of this data detailing main enclosure features surrounding settlement (*bottom*). B, Enhanced view of fluxgate gradiometer survey data where the trench 1 transect was placed to ground truth ditch and palisade enclosure construction (*left*) and interpretation of this data detailing key enclosure features and internal dipolar and nondipolar features interpreted as prehistoric burned and unburned pit and/or house pit structures, respectively (*right*). A color version of this figure is available online.



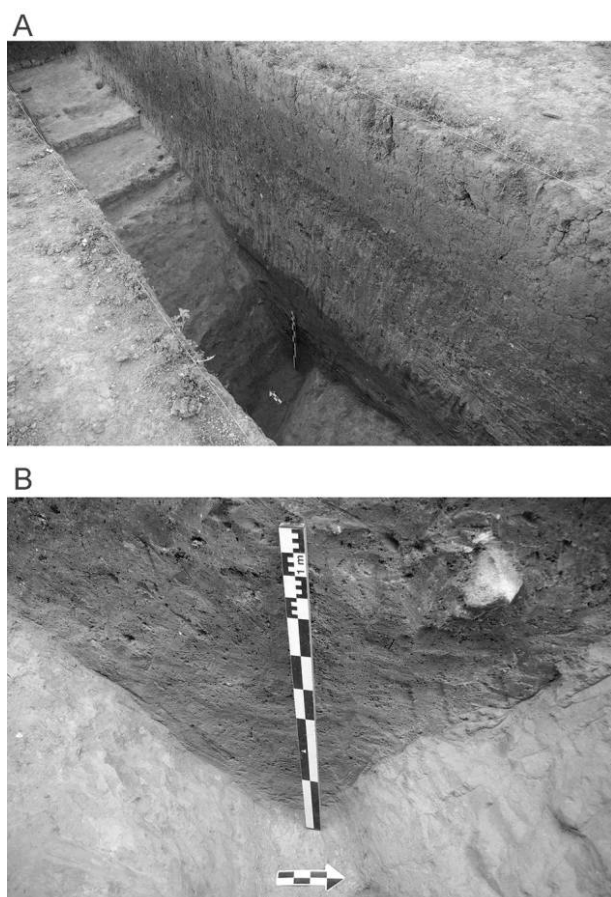


Figure 4. Close-up photographs of the V-shaped outer ditch. A, West-facing section. B, East-facing section. A color version of this figure is available online.

(feature 33) filled with midden deposits. Stratigraphic information and alignment of ditch and palisade features strongly suggest that all these features were part of the same defensive system, were used simultaneously, and in all likelihood were constructed at the founding of the settlement and remained in use until the abandonment of the settlement as a whole.

Testing geophysical anomalies within the enclosed area of the settlement, trenches 2 and 3 (fig. 2) uncovered the majority of two large pit features, dug some 2 m into the natural soil. Both pits contained large amounts of ash and midden-type deposits rich in pottery fragments, daub from burnt and destroyed wattle-and-daub constructions, ground stone, figurines, animal bones, bone tools, and malachite (green) and azurite (light blue) copper ores, which were collected for either pigment preparation or smelting from the copper mining zone some 10 km to the east. One of the pits was associated with a domed oven with evidence of replastering. We believe that, over these pit features, stood aboveground buildings with pits below acting as an intentional constructional element (e.g., as a storage cellar and/or as thermal isolation). The structures' destruction debris was only partly burnt and preserved after

abandonment, the removal of which might also have been aided to some degree by subsequent erosion because of the single-layer nature of occupation at the site. Hence the taphonomy of these domestic structures' destruction and debris deposition is significantly different from well-attested examples of (possibly intentionally) burnt buildings at many other Vinča culture sites.

The repertoire of ceramic forms and decorations from both the enclosure features and settlement pits confirms elements characteristic for early Vinča A and B phases that are dated to before 5,000 cal BC (Borić 2009; Whittle et al. 2016). Diagnostic Vinča A and B material culture includes anthropomorphic appliques on ceramic vessels, red-painted footed chalices, geometrically incised lamp-altars with zoomorphic-anthropomorphic protoms, barbotine decoration, bands with dotted incision, and white incrustation. Figurines by and large show the same early elements in their iconography (fig. 6). Based both on site stratigraphy and on the homogeneity of

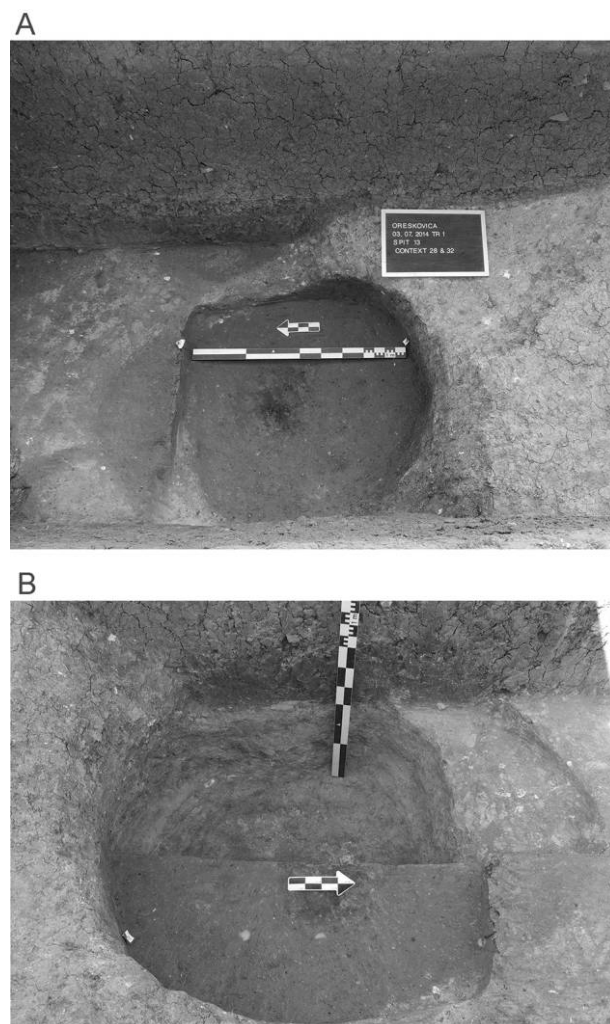


Figure 5. Palisade posthole before excavation, facing east (A), and half-sectioned, facing west (B). A color version of this figure is available online.

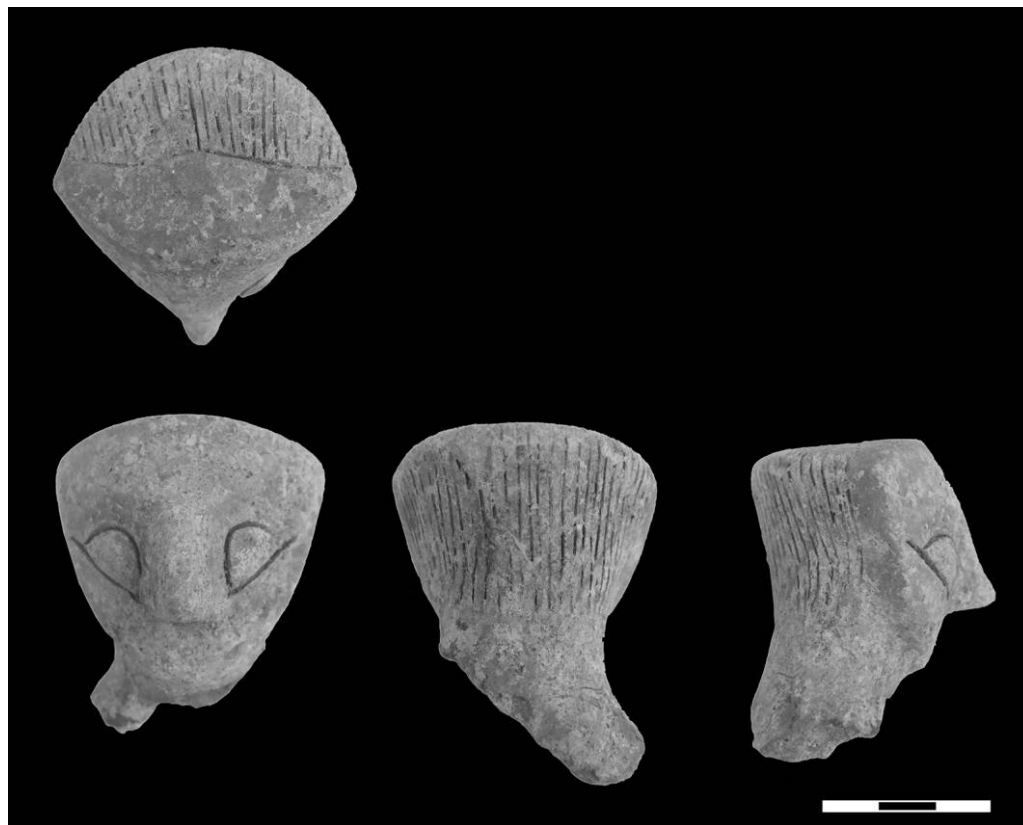


Figure 6. Fragmented clay figurine head with traces of painting found in context 57 (x.21) in a backfilled pit feature at Oreškovića-Selište. A color version of this figure is available online.

diagnostic elements in the ceramic assemblage, Oreškovića-Selište appears to be a single-phased settlement that, despite a significant build-up and some substantial features, was abandoned after a relatively short period of occupation during Vinča B phase. This conclusion was tested by accelerator mass spectrometry (AMS) dating of different excavated contexts.

AMS Dating

After faunal analyses, samples chosen from excavated enclosure and settlement features were identified to species level, and seven samples have been AMS dated (table 1). Among the identified species, remains of domestic cattle dominate, followed by domestic pig, caprines, red deer, hare, wild boar, dog, red deer, and marten. Three samples are from articulating animal joints found in two different settlement features, which suggests that the dated remains come from freshly butchered animals rather than from residual faunal remains. The dated articulating joints come from two large settlement pits. No articulations are present in a limited excavation segment of the outer ditch feature. However, here, among other stratified samples, an antler tool from a discarded mattock was dated (OxA-31571) that might have been used for ditch digging or recuttings,

and it provided the oldest date out of the seven dated samples. A Bayesian statistical model combining these results with the stratigraphic sequence (fig. 7) shows a good overall agreement index (A model: 103). It suggests that the settlement at Oreškovića-Selište began *between 5,370 and 5,080 cal BC* (95% probability for “Start Oreškovića-Selište”; fig. 7), probably *between 5,320 and 5,210 cal BC* (60.3% probability) or *between 5,170 and 5,130 cal BC* (7.9% probability). The settlement at Oreškovića-Selište ended *between 5,220 and 4,980 cal BC* (95% probability for “End Oreškovića-Selište”; fig. 7), probably *between 5,210 and 5,180 cal BC* (8.4% probability) or *between 5,160 and 5,040 cal BC* (59.8% probability). Despite problems caused by a plateau on the calibration curve in the period between 5,200 and 5,100 cal BC, the obtained posterior density estimates suggest a short-lived settlement during the Vinča B phase, which is in agreement with pottery typology.

In this microregional context, a series of nine AMS dates from the site of Belovode place the founding of the site in the earliest phases of the Vinča culture development during the period 5,470–5,310 cal BC (68% probability), while the settlement continued to be occupied up to 4,710–4,520 cal BC (68% probability; Borić 2009:211). Hence while the settlement at Belovode remained occupied for a considerable period of time,

Table 1. Radiocarbon accelerator mass spectrometry measurements from the Oreškovića-Selište site

Laboratory ID	Context (d/m/y)	Material	Radiocarbon measurement (BP)	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	C:N	Calibrated date (95% confidence interval, cal BC)	Posterior density estimate (95% probability cal BC)
OxA-31571	Tr 1, (46), quad 1021/1068, depth 2.92 cm (8/7/14)	Antler, <i>Cervus elaphus</i> (S.1)	6265 \pm 38	−21.9	7.8	3.3	5330–5070	5310–5070
OxA-31572	Tr 1, (17), spit 16, quad 1020/1070 (5/7/14)	Metatarsal, <i>Capreolus capreolus</i> (S.4)	6137 \pm 35	−21.5	7.2	3.3	5220–4990	5220–5040
OxA-31573	Tr 1, (36), quad 1020/1059 (5/7/14)	Metacarpal, <i>Bos taurus</i> (S.6)	6223 \pm 37	−20.3	7.8	3.3	5310–5060	5290–5060
OxA-31574	Tr 2, (62), spit 9, x.3 (Y = 1010.771, X = 990.813, Z = 209.586) (13/7/14)	Articulating sides of the mandible, <i>Sus scrofa domestica</i> (S.8)	6224 \pm 37	−20.0	9.4	3.4	5310–5060	5290–5070
OxA-31575	Tr 2, (14), spit x.39 (Y = 1009.281, X = 988.942, Z = 209.931)	Horncore, <i>B. taurus</i> (S.9)	6164 \pm 39	−20.7	8.3	3.4	5220–5000	5220–5050
OxA-31576	Tr 3, (57), spit 10, quad 1010/1009 (13/7/14)	Articulating radius and ulna, <i>Lepus europaeus</i> (S.10)	6206 \pm 37	−17.9	5.0	3.3	5300–5050	5270–5060
OxA-33521	Tr 3, (57), spits 10–11, quad 1011/1007 (15/7/14)	Articulating femur and tibia, <i>Martes</i> species (S.11)	6210 \pm 32	−20.0	13.8	3.0	5300–5050	5260–5060

Note. Quad = quadrant; S = sample; Tr = trench.

the occupation at Oreškovića-Selište came to a halt after a short period of use.

Discussion

Based on the results of our geophysical prospection work, excavations, and dating evidence, the site of Oreškovića-Selište is currently the earliest systematically excavated enclosed and fortified site in the Neolithic Balkans. Because the site is a one-phase, single-layer settlement, it is with more certainty that one here observes the dynamics involved in site founding and abandonment. In contrast with the slow and haphazard establishment of habitation sites, the layout of the settlement at Oreškovića-Selište, with its enclosure and fortification features, suggests a preconceived template for a village-type settlement in the early phases of the Vinča culture. The founding of the settlement and its enclosure features were made possible through large earthworks that were communal undertakings, the construction of which might have been the very act of community creation. We have estimated that around 42,500 hours of work must have been needed for the digging of the outer ditch. To put this into perspective, a work force of 30 people working 12 hours per day would need 120 days to complete the digging of the ditch alone. Furthermore, if the palisade with 1-m-deep and 1-m-wide postholes, which was uncovered through the trench 1 excavation, indeed encircles the whole

settlement—as we suspect on the basis of the results of geophysical prospection—additional hours of work should be calculated to account for the construction of the complete defensive system.

All of this work and the investment of time, energy, and resources are impressive in their scope and required a substantial and well-organized population at the start of phase Vinča B, dating to around 5,200 cal BC. The density of other contemporaneous sites in this microregion and across the area of the Vinča social network, as well as the existence of the very large megasite at Belovode, further contribute to the conclusion that there were relatively high population levels for the period in question. Furthermore, the abandonment of this relatively substantial settlement after a short period of occupation, despite significant investment made in its build-up, speaks of social upheavals at the end of phase Vinča B in the last century of the sixth and the beginning of the fifth millennia BC. Moreover, this particular locality at Oreškovića-Selište was not settled again during the Neolithic. There are other material culture correlates that indicate changes in the social fabric of Vinča culture groups in the transition from Vinča B to Vinča C around this time. Based on the evidence presented here, which may correspond to that from many other enclosed Vinča settlements, it is possible to speculate that intergroup competition, conflict, and likely violence might have been characteristic of the period.

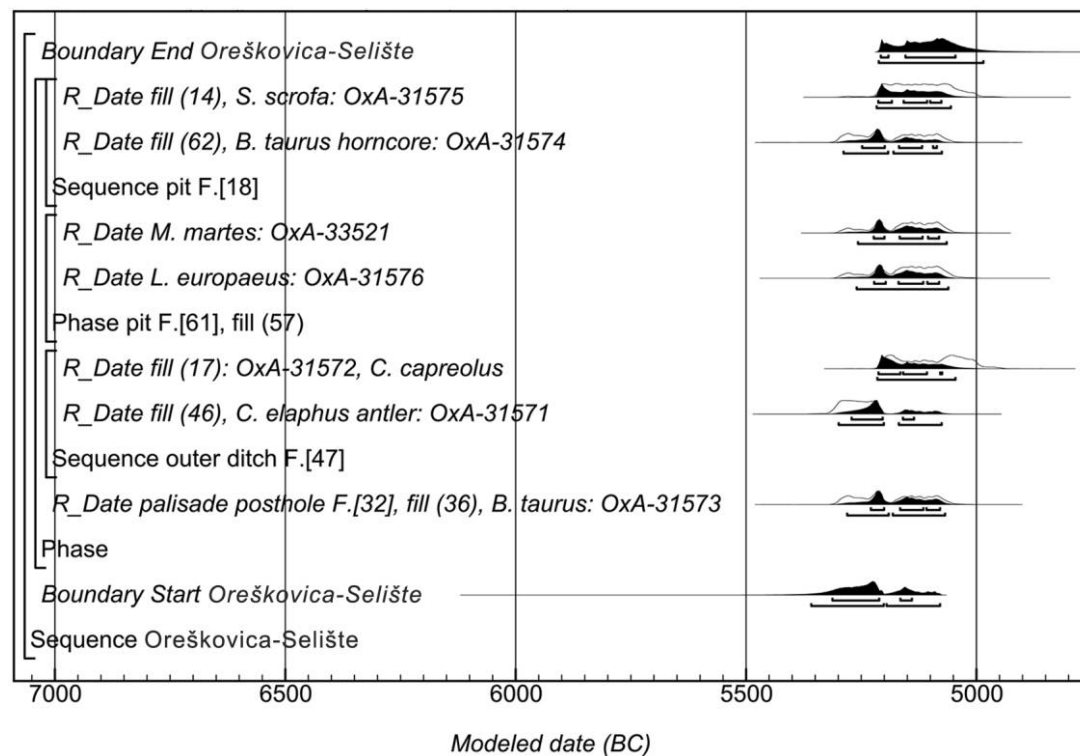


Figure 7. Probability distributions of radiocarbon dates from Oreškovica-Selište. Each distribution represents the relative probability that an event occurred at a particular time. For the radiocarbon measurements, distributions in outline are the results of simple radiocarbon calibrations, and solid distributions are the output from the chronological model. Other solid distributions are estimated from the model. The large square brackets and OxCal version 4.3.2 (Bronk Ramsey 2017; r5 IntCal 13 Atmospheric Curve adapted from Reimer et al. 2013) CQL2 keywords define the overall model exactly. This model represents the previous stratigraphic information outlined in the text. *B. taurus* = *Bos taurus*; *C. capreolus* = *Capreolus capreolus*; *C. elaphus* = *Cervus elaphus*; F = feature; *L. europaeus* = *Lepus europaeus*; *M. martes* = *Martes martes*; *S. scrofa* = *Sus scrofa*.

Keeley, Fontana, and Quick (2007:87) suggest that V-sectioned ditches backed by a palisade or other protective features are indicative of the defensive and military function of such systems and are “completely superfluous to the goals of preventing livestock from straying, deterring the entrance of non-human predators or peaceful yet suspicious humans, or symbolizing a boundary to other humans.” This corresponds with the evidence we found at Oreškovica-Selište, and we are inclined to interpret its enclosure and fortification features as defensive, built to secure the community that inhabited this early village from attacks that might have come from other (competing?) neighboring villages. In recent years, we have learned a great deal about the existence of Neolithic enclosures in this regional context, based largely on the increasing number of geophysical surveys. To date, such defensive features have been excavated at a few other Neolithic sites within the region, absolutely dated, and the findings published (see supplement B, which lists Neolithic sites in southeastern Europe with enclosure features).

There is considerable variability in the type of enclosure features found on Neolithic sites across southeastern Europe—from the common occurrence of ditches in the Carpathian Basin and in other riverine and lowland zones, occasionally

coupled with evidence of rows of postholes indicating the existence of palisades, to the use of drystone walls in certain areas of the central Balkans and Greece and a general preference for naturally raised topographic locations for the establishment of settlements. There is also a significant chronological variability with regard to when the evidence of enclosure features appears for the first time and how long individual features were used. At present, before a more detailed chronology of such features at each individual site is established, it remains difficult to say whether more specific regional and diachronic patterning of this evidence can be discerned. Yet evidence of Early Neolithic enclosures and fortifications is relatively sporadic, and it is only in the mid-sixth millennium BC that enclosures become more common, widespread, standardized, and a persistent phenomenon of many sites. Almost as a rule, wherever extensive geomagnetic surveys have been conducted on Middle to Late Neolithic sites across southeastern Europe, some type of enclosure features have been ascertained. One could speculate that demographic factors, such as the overall increase in population from the Early to the Middle and Late Neolithic across the region as well as an increasing tendency toward territorialism, with the concomitant competition for resources and dynamic social interactions, might have led to frequent feuding among

neighboring villages. Such intermittent conflicts might have taken place within archaeological taxonomic units or “cultures,” such as the Vinča culture world, which might have represented effective tribal territories and mating networks with shared traditions of practical gestures and material culture styles. Intermittent feuding is also likely among different cultural taxonomic units, especially along the border zones. Direct bioarchaeological evidence of such postulated violent encounters remains scarce at present in the central Balkan Neolithic, although occasional human remains deposited in an unstructured manner have been found both within settlements and in surrounding ditches (e.g., Okolište [Müller 2014] and Stubline [A. Crnobrnja, personal communication, 2015]). The question remains open to what extent the widespread evidence of burnt buildings at many sites is the consequence of intentional burning of these features (e.g., Stevanović 1997) or the result of violent attacks.

Parkinson and Duffy (2007) have argued that increasing social segmentation and the concept of substitutability (i.e., “a cultural logic that permits the cultural substitution and equation of an individual with a specific group with which that person is a member”; Parkinson and Duffy 2007:100) were the main social triggers for the appearance of enclosures, fortifications, and similar features in the European Neolithic. From the perspective of practice theory, we suggest that the communal labor that went into the construction of enclosed sites in the Neolithic of southeastern Europe must have acted as a powerful and cohesive social bond in creating and maintaining a sense of belonging for groups who identified with particular settlements. We also argue that, while various enclosure features in the Neolithic of southeastern Europe most likely had a defensive functional role, this does not stand in opposition to the symbolic importance of such demarcations between the world inside a village and the one outside. As in examples coming from African ethnography (cf. Descola 2013:26), the village might have been conceived as governed by social order and segmentary hierarchy strongly permeated by ancestral presence, while the outside might have been conceived as an unruly and dangerous space.

In the future, with a larger sample of enclosed Neolithic sites investigated in the same way as Oreškovica-Selište, it will be possible to provide a more robust analysis of diverse trajectories of settlement histories. This will allow us to attempt to answer with more certainty questions concerning competition, conflict, and violence as constitutive forms of social interaction and reproduction in the Neolithic Balkans.

Acknowledgments

We acknowledge funding received in 2012 from the Wenner-Gren Foundation for Anthropological Research through an International Collaborative Research Grant (115 to D. Borić, R. Doonan, B. Hanks, and D. Šljivar), funding received in 2014 and 2015 for fieldwork and postexcavation analyses from the Study Abroad Program of Cardiff University (Cardiff, UK), and funding for determining AMS dates from the Natural

Environment Research Council Radiocarbon Facility (NF/2014/2/0). We are grateful to the Center for Russian and Eastern European Studies at the University of Pittsburgh (Pittsburgh, PA) for small grants to D. Borić and B. Hanks in 2016.

References Cited

- Andersen, Niels H. 1997. *The Sarup enclosures*. Moesgaard, Denmark: Jysk Arkæologisk Selskab.
- Arkush, Elizabeth, and Charles Stanish. 2005. Interpreting conflict in the ancient Andes. *Current Anthropology* 46:3–28.
- Barna, Judit P. 1996. The common grave of the Lengyel culture in Esztergályhorváti, county Zala. *Zalai Múzeum* 6:149–160. [In Hungarian.]
- Borić, Dušan. 2009. Absolute dating of metallurgical innovations in the Vinča culture of the Balkans. In *Metals and societies: studies in honour of Barbara S. Ottaway*. Tobias K. Kienlin and Benjamin W. Roberts, eds. Pp. 191–245. Bonn, Germany: Habelt.
- . 2015. The end of the Vinča world: modelling Late Neolithic to Copper Age culture change and the notion of archaeological culture. In *Neolithic and Copper Age between the Carpathians and the Aegean Sea: chronologies and technologies from the 6th to 4th millennia BCE*. Svend Hansen, Pál Raczky, Alexandra Anders, and Agathe Reingruber, eds. Pp. 157–217. Bonn, Germany: Marie Leidorf.
- Bronk Ramsey, Christopher. 2017. OxCal 4.3 manual. http://c14.arch.ox.ac.uk/oxcalhelp/hlp_contents.html.
- Chapman, John. 1981. *Vinča culture of south-east Europe: studies in chronology, economy and society*. BAR International Series 117. Oxford: BAR.
- Chapman, John, Biserka Gaydarska, and Karen Hardy. 2006. Does enclosure make a difference? a view from the Balkans. In *Enclosing the past: inside and outside in prehistory*. Anthony Harding, Susanne Sievers, and Natalie Varnaclová, eds. Pp. 20–43. Sheffield, UK: Collins.
- Coudart, Annike. 1991. Social structure and relationships in prehistoric small-scale sedentary societies. In *Between bands and states*. Susan A. Gregg, ed. Pp. 395–430. Carbondale: Southern Illinois University Press.
- Crnobrnja, Adam. 2012. Group identities in the central Balkan Late Neolithic. *Documenta Praehistorica* 39:155–165.
- Descola, Philippe. 2013. *Beyond nature and culture*. Chicago: University of Chicago Press.
- Fausto, Carlos. 2012. *Warfare and shamanism in Amazonia*. Cambridge: Cambridge University Press.
- Gimbutas, Marija. 1991. *The civilization of the goddess: the world of Old Europe*. San Francisco: Harper.
- Ivanova, Mariya. 2008. *Befestigte Siedlungen auf dem Balkan, in der Ägäis und Westanatolien, ca. 5000–2000 v. Chr.* Münster, Germany: Waxmann.
- Keely, Lawrence H. 1996. *War before civilization*. New York: Oxford University Press.
- Keely, Lawrence H., Marisa Fontana, and Russell Quick. 2007. Baffles and bastions: the universal features of fortifications. *Journal of Archaeological Research* 15(1):55–95.
- Link, Thomas. 2006. *Das Ende der neolithischen Tellsiedlungen. Ein kulturgeschichtliches Phänomen des 5. Jahrtausends v. Chr. im Karpatenbecken*. Bonn, Germany: Habelt.
- Medović, Aleksandar, Robert Hofmann, Tijana Stanković-Pešterac, Stefan Drebrodt, Ilonka Medović, and R. Pešterac. 2014. The Late Neolithic settlement mound Bordoš near Novi Bečej, Serbian Banat, in a multiregional context: preliminary results of geophysical, geoarchaeological and archaeological research. *Rad Muzeja Vojvodine* 56:53–77.
- Meyer, Christian, Christian Lohr, Detlef Gronenborn, and Kurt W. Alt. 2015. The massacre mass grave of Schöneck-Kilianstädten reveals new insights into collective violence in Early Neolithic Central Europe. *Proceedings of the National Academy of Sciences of the USA* 112(36):11217–11222.
- Müller, Johannes. 2014. Frühe Bauern und Tellsiedlungen in Südosteuropa: Netzwerke, Bevölkerungsdichten und Siedlungssysteme. In *Vom Jäger und Sammler zum Bauern*. Detlef Gronenborn and Thomas Terberger, eds. Pp. 15–24. Stuttgart, Germany: Theiss.
- Müller, Johannes, Robert Hofmann, Nils Müller-Scheefel, and Knut Rassmann. 2013. Neolithische Arbeitsteilung: Spezialisierung in einem Tell um 4900 v. Chr. In *Moments in time: papers presented to Pál Raczky on his*

- 60th birthday. Alexandra Anders and Gabriella Kulcsár, eds. Pp. 407–420. Budapest, Hungary: L'Harmattan.
- Orton, David. 2012. Herding, settlement, and chronology in the Balkan Neolithic. *European Journal of Archaeology* 15(1):5–40.
- Overing, Joanna, and Alan Passes, eds. 2000. *The anthropology of love and anger: the aesthetics of conviviality in native Amazonia*. London: Routledge.
- Parkinson, William A. 2002. Integration, interaction, and tribal 'cycling': the transition to the Copper Age on the Great Hungarian Plain. In *The archaeology of tribal societies*. William A. Parkinson, ed. Pp. 391–438. Archaeological series 15. Ann Arbor, MI: International Monographs in Prehistory.
- Parkinson, William A., and Paul R. Duffy. 2007. Fortifications and enclosures in European prehistory: a cross-cultural perspective. *Journal of Archaeological Research* 15:97–141.
- Parkinson, William A., Rick W. Yerkes, Attila Gyucha, Apostolos Sarris, Margaret Morris, and Rodrick B. Salisbury. 2010. Early Copper Age settlements in the Körös region of the Great Hungarian Plain. *Journal of Field Archaeology* 35(2):164–183.
- Perić, Slaviša, Christoph Rummel, Georg Schafferer, and Daniel Winger. 2016. Geomagnetic survey of Neolithic settlements in the middle Morava Valley: preliminary results. In *The Neolithic in the Middle Morava valley*. Slaviša Perić, ed. Pp. 9–27. Belgrade, Serbia: Institute of Archaeology.
- Reimer, Paula J., Edouard Bard, Alex Bayliss, J. Warren Beck, Paul G. Blackwell, Christopher Bronk Ramsey, Caitlin E. Buck, et al. 2013. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. *Radiocarbon* 55(4):1869–1887.
- Santos Graner, Fernando. 2000. The Sisyphus syndrome, or the struggle for conviviality in native Amazonia. In *The anthropology of love and anger: the aesthetics of conviviality in native Amazonia*. Joanna Overing and Alan Passes, eds. Pp. 268–287. London: Routledge.
- Schier, Wofram. 2008. Uivar: a Late Neolithic–Early Eneolithic fortified tell site in western Romania. In *Living well together?* Douglass Bailey, Alasdair Whittle, and Daniela Hofmann, eds. Pp. 54–67. Oxford: Oxbow.
- Šljivar, Duško, Jelka Kuzmanović-Cvetković, and Dragan Jacanović. 2006. Belovode-Pločnik, new contributions regarding the copper metallurgy in the Vinča culture. In *Homage to Milutin Garašanin*. Nikola Tasić and Cvetan Grozdanov, eds. Pp. 251–266. Belgrade, Serbia: Serbian Academy of Sciences and Arts and Macedonian Academy of Sciences and Arts.
- Stevanović, Mirjana. 1997. The age of clay: the social dynamics of house destruction. *Journal of Anthropological Archaeology* 16(4):334–395.
- Tasić, Nenad, Miroslav Marić, Christopher Bronk Ramsey, Bernd Kromer, Alistair Barclay, Alex Bayliss, Nancy Beavan, Biserka Gaydarska, and Alasdair Whittle. 2016. Vinča-Belo Brdo, Serbia: the times of a tell. *Germania* 93 (1):1–75.
- Tringham, Ruth. 1992. Life after Selevac: why and how a Neolithic settlement is abandoned. *Balkanica* 23:133–145.
- Tripković, Boban. 2013. *Domaćinstvo i zajednica. Kućne i naseobinske istorije u kasnom neolitu centralnog Balkana*. Belgrade, Serbia: Filozofski fakultet.
- Viveiros de Castro, Eduardo. 2011. *The inconstancy of the Indian soul: the encounter of Catholics and cannibals in 16th-century Brazil*. Chicago: Prickly Paradigm.
- Wahl, Joachim, and Iris Trautmann. 2012. The Neolithic massacre at Talheim: a pivotal find in conflict archaeology. In *Sticks, stones, and broken bones: Neolithic violence in a European perspective*. Rick J. Schulting and Linda Fibiger, eds. Pp. 77–100. Oxford: Oxford University Press.
- Whittle, Alasdair. 1996. *Europe in the Neolithic: the creation of new worlds*. Cambridge: Cambridge University Press.
- Whittle, Alasdair, Alex Bayliss, Alistair Barclay, Biserka Gaydarska, Eszter Bánffy, Dušan Borić, Florin Draşovean, et al. 2016. A Vinča potscape: formal chronological models for the use and development of Vinča ceramics in south-east Europe. *Documenta Praehistorica* 43:1–60.