Foraging Assemblages

Volume 2

Edited by Dušan Borić,
Dragana Antonović, and Bojana Mihailović

COLUMBIA UNIVERSITY
THE ITALIAN ACADEMY
FOR ADVANCED STUDIES IN AMERICA

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Serbian Archaeological Society
The Italian Academy for Advanced Studies in America, Columbia University

Belgrade & New York

The NOMIS Foundation provided a grant in support of preparation and publication of this book

Publishers
Serbian Archaeological Society, Belgrade, Republic od Serbia
The Italian Academy for Advanced Studies in America, Columbia University, New York, USA

For Publishers
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David Freedberg

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First published 2021

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Desktop publishing
Marko Huber

Print run 400

Printed by Publikum

ISBN
978-86-80094-15-1
978-86-80094-16-8
A CIP record of this book is available from the National Library of Serbia, Belgrade

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

903(4)"632/633"(082)
902.2(4)(082)

FORAGING Assemblages. Vol. 2 / edited by Dušan Borić, Dragana Antonović, and Bojana Mihailović. - Belgrade : Serbian Archaeological Society ; New York : The Italian Academy for Advanced Studies in America, Columbia University, 2021 (Belgrade : Publikum). - VIII str., str. 353-820 : ilustr. ; 29 cm

Tekst štampan dvostubačno. - Tiraž 400. - Napomene i bibliografske reference uz tekst. - Bibliografija uz svaki rad. - Registar.

ISBN 978-86-80094-15-1 (SAS)
ISBN 978-86-80094-16-8 (niz)

1. Borić, Dušan, 1973- [уредник] 2. Antonović, Dragana, 1960- [уредник]
3. Mihailović, Bojana, 1963- [уредник]

а) Археолошка налазишта, праисторијска -- Европа -- Мезолит -- Зборници
б) Археолошка истраживања -- Европа -- Зборници

COBISS.SR-ID 35939593

Front Cover Illustration: Sculpted sandstone boulder named '*Progenitor*' (inv. no. 41) from Lepenski Vir (National Museum in Belgrade)
Back Cover Illustration: Lepenski Vir during excavations (Photograph courtesy of of Alan McPherron)

VOLUME I

108. Debating Neolithization from a Mesolithic point of view: The Sado Valley (Portugal) experience

Mariana Diniz, Pablo Arias Cabal, Ana Cristina Araújo, and Rita Peyroteo-Stjerna

In this paper we discuss how the Late Mesolithic Sado Valley hunter-gatherers interacted with the first agro-pastoralist societies settled in southern Portugal in the course of the second half of the sixth millennium cal BC. The archaeological record available during this period in southern Portugal reflects the presence of two distinct cultural groups. Differences can be detected not only on an economic level but also in settlement patterns, material culture, and symbolic behaviour. By the end of the first quarter of the fifth millennium cal BC, the Sado shell middens seem to have been abandoned, raising the question of how and why these last hunter-gatherers left their traditional territory, since no environmental change is recorded in the area that could explain it. Using chronological information and some Neolithic elements found in the area of the shell middens, we will debate the Neolithization process from a Mesolithic point of view.

Keywords: Mesolithic, Neolithization process, cultural resilience, material culture, Sado Valley

Preamble

In September 2015, we were gathered at the MESO 2015 in Belgrade in a session called *Transitions – Endings* to discuss the end of a world – that of the hunter-gatherers – and the beginning of a new one, the one of the agro-pastoralists. This meeting happened at the moment when Europe's future seemed unpredictable and when we were surrounded by transitions.

We were discussing the migrations of peoples in the past, while the 'migration' phenomenon into Europe – from both the east and south – was becoming a large-scale humanitarian crisis. Debating past migration processes and their consequences may be seen as not such an urgent exercise. However, we argue, that a reflection on social phenomena in the past may give us some clues and a more informed perspective on how to act in the present. Like today, transitions in the past were probably perceived as an intersection of the fear of the *other* and the challenge from the *different*.

While broadcasted news resemble a nightmare version of the San Valero's map (1946), showing routes and entry points into Europe, we do know why people today are moving, and why new genes, new artefacts, and new cultural attitudes are entering into Europe, even if we cannot predict the historical consequences of these processes. Because it is difficult to reflect upon the Neolithization process in Europe without having in mind this modern context of migrations, this paper was conceived as a tribute – which we as social scientists can do – to all of those who are now fleeing their homelands. Regardless of the complexity of the motives that impel these people to move, they are participants in *transitions*, not as *endings* but as *beginnings*.

The 'big picture'

When reflecting on the Neolithization process in Europe, the central issue in this session, we do not consider it a humanitarian catastrophe. On the contrary, for most of us as inheritors of an underlying evolutionary way of thinking, the Neolithic period is still considered a step forward in human progress. While we can describe the consequences of the Neolithization process in Europe, we are not able to clearly understand why it started and why it went on for more than two millennia; we consider the starting point to be the absolute chronology available for the Early Neolithic in the Aegean/Balkan Peninsula (*e.g.* Reingruber 2011) and the chronology of the Neolithization of the British Isles to be an estimate of its end (*e.g.* Whittle *et al.* 2011).

The onset of the Neolithic does not seem to have been associated with physical violence or destruction. The 8.2 ka BP climatic event is frequently assumed as the cause of the PPNB collapse in the Near East, triggering population movements towards the west (*e.g.* Özdoğan 2014, 173). However, extensive scholarship reveals that this is a controversial issue with a multitude of possible prime

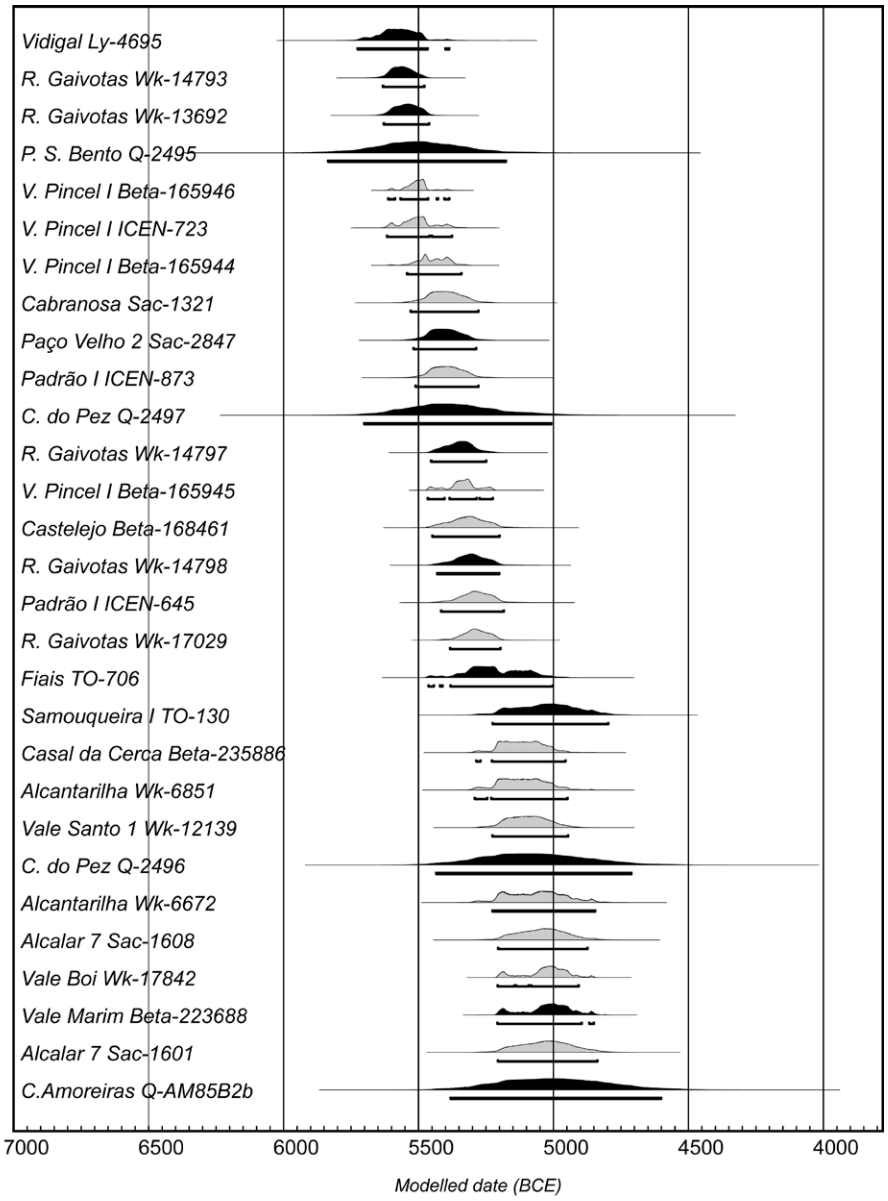

Fig. 108.1. Calibrated radiocarbon dates (cal BC at 95 percent confidence) of Mesolithic (black) and Neolithic (light grey) sites based on existing publications. Calibrated using OxCal v. 4.2 (Bronk Ramsey 1995) with IntCal13 and Marine13 calibration curve (Reimer *et al.* 2013). Different ΔR values were used according to the site location and published data. Proportion of marine protein in diet was also considered in the calibration of human bone samples, assuming an error of 10 percent.

factors (for an opposite perspective see Flohr *et al.* 2016; van der Plicht *et al.* 2011, 237). The seminal questions are still open: why did these migrants start moving, and why did they continue moving? Following an *indigenous* perspective in Neolithic literature (Dennel 1983), it is recognized today that hunter-gatherers were not alone, and new genes entered Europe during the Neolithization process (*e.g.* Hofmanová *et al.* 2016; Semino *et al.* 2000; Szécsényi-Nagy *et al.* 2017; Olalde *et al.* 2015, 2019; Villalba-Mouco *et al.* 2019). Although this genetic input is not completely understood (*e.g.* Fernandez *et al.* 2014), it cannot be described as an 'invasion', at least from a quantitative point of view, since the predicted genetic income would involve less than 25 percent of the extant population (Richards 2003a, 152–3, 2003b, 164).

Even if the nature of interactions between hunter-gatherers and Neolithic groups is still under debate, those interactions do not present a pattern of violence in the archaeological record. Recently, several research projects have focused on signs of physical conflict during the Neolithization process. Evidence of violent interactions is sparse, suggesting that violence was not a crucial part of the process. The head burials from Ofnet cave, the battle scenes in the Spanish Levantine rock art, and the Talheim communal grave remain the exceptional cases (Guilaine and Zammit 2005, 76–122; Parker Pearson and Thorpe 2006, 67–86). In western Iberia, various analyses of Late Mesolithic and Early Neolithic human remains have not revealed signs of physical confrontation, and the injuries detected can be related to daily activities (Cunha *et al.* 2004; Jackes 2004; Peyroteo-Stjerna 2016, 469).

However, research in the social sciences and ethical debates on human rights have clearly demonstrated that violence against the *other* is not only a matter of body harm. Cultural dissolution may be perceived as real drama by its participants, who lose their modes of behaviour through an acculturation process *(e.g.* Levin 2001; Ojala 2009; https://www.culturalsurvival.org/about). The multiple ways in which cultural transitions can occur should be addressed when studying the onset of the Neolithic in Europe. The process had started in a hunter-gatherer territory, but over a short period of time, the temperate areas of Europe were

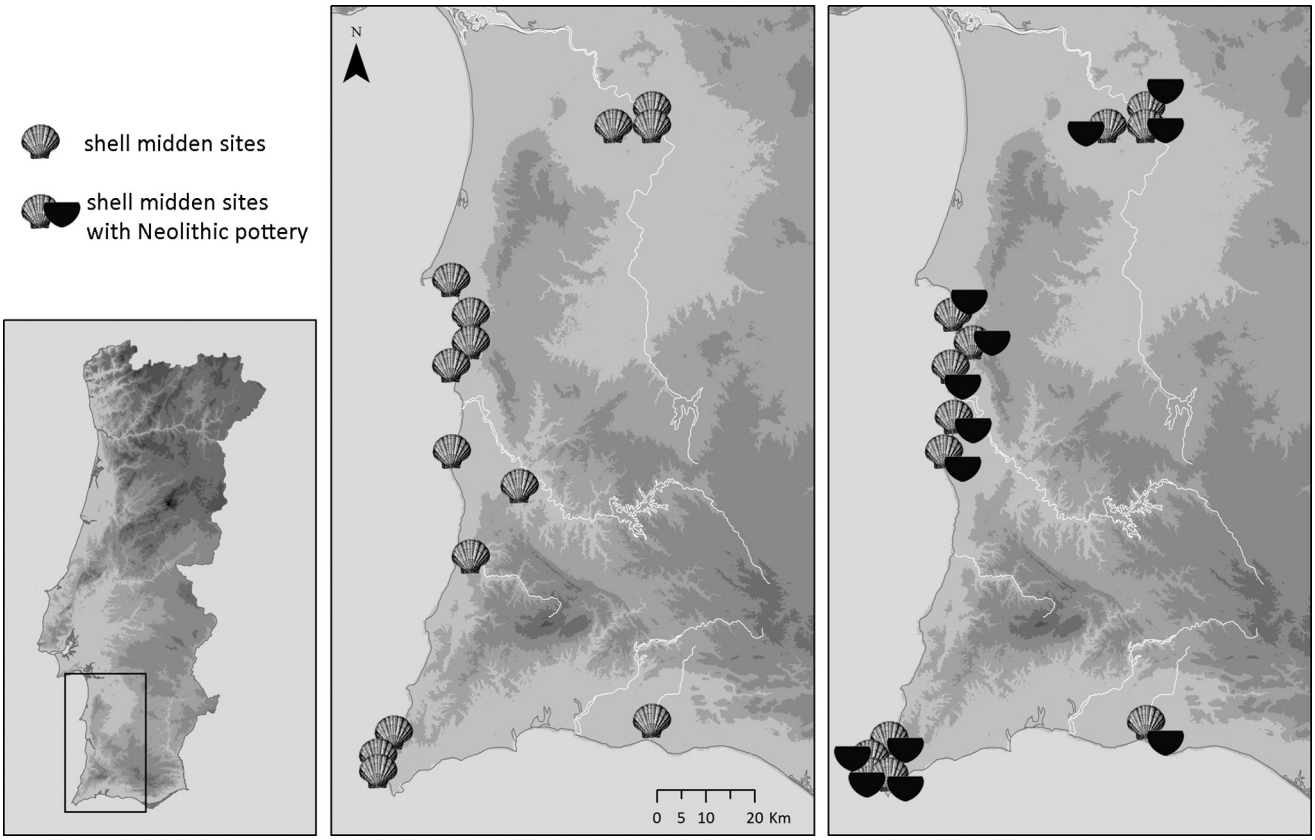

Fig. 108.2. Shell midden sites in south-western Portugal, the first half of the sixth millennium cal BC (left map) and the second half of the sixth millennium cal BC (right map).

fully occupied by agro-pastoralist groups. How this major transition happened, not only as a global change but also by following regional trajectories, is the topic of discussion in this paper.

The Sado Valley experience

Southern Portugal, particularly the Tagus and Sado palaeoestuaries and the south-western coastal areas, were largely occupied by Late Mesolithic hunter-gatherers, and their study can contribute to this debate. The shell midden sites formed by these groups can be investigated to answer questions regarding the scope of the social interactions detected in the archaeological record.

How did the Late Mesolithic hunter-gatherers of the Sado Valley (Arnaud 1989; Arias *et al.* 2015; Arias, Diniz *et al*. this volume; Diniz and Arias 2012) react to the new cultural stimulus defined as the *Neolithization process*? This is a central question because, at least during the second half of the sixth millennium cal BC, Mesolithic hunter-gatherers and Neolithic groups coexisted in southern Portugal (Fig. 108.1). However, it should be pointed out that, like in other transitional contexts in southern Portugal, it is extremely difficult to assign cultural borders. One of the problems is the lack of common denominator to define the minimum criteria for attributing an occupation either to the Mesolithic or Neolithic. Commonly, the absolute chronology of a site, before or after *c.* 5500 cal BC, along with the presence of pottery, are used as the cultural criteria to define a group as Neolithic. The focus on pottery as the main criterion in this transitional moment reflects the role that this cultural element seems to have played in interactions between these groups. Within the 'Neolithic package', pottery was possibly the only Neolithic item that was adopted by the hunter-gatherer communities in southern Portugal (Fig. 108.2). If material culture is an active participant in moments of cultural interaction, and there is no doubt that objects were among the first items to be exchanged between different cultural groups upon contact, it is hard to imagine that only pottery was transferred to Mesolithic groups, as the archaeological record suggests. Even so, these pottery transfers, which could reflect continuous interactions between hunters-gatherers and agro-pastoralist groups, should carefully be examined because the significance of pottery among these hunter-gatherers is still under debate (*e.g.* Hayden 2010), and, because its presence is in fact scarce, and, in several contexts, it is

not possible to associate a few retrieved shreds to the Mesolithic occupation.

In the Sado Valley, pottery does not seem to have been a hunter-gatherer item, but rather one of agro-pastoralists. Recent studies (Diniz 2010; Diniz and Cubas 2015) suggest that pottery was used at sites after their abandonment by Mesolithic groups. Similar observations were made by previous researchers in the Sado shell midden of Poças de S. Bento (Larsson 2010) and at the Muge shell midden of Cabeço da Amoreira (Bicho *et al.* 2015, 637). An exception may be Cabeço das Amoreiras (Arnaud 1989), where Cardial pottery was retrieved from the basal layers of the shell midden, suggesting a possible relationship between hunter-gatherers and agro-pastoralist groups.

Looking for other key elements that can be considered milestones of this social change, such as the introduction of domesticates (animals and plants), we found conclusive data in the faunal analysis of the Sado middens: no domesticates have yet been recovered in the shell middens along the valley (Arnaud 1989; Dean 2010; Detry 2003), and only wild species from different environments were consumed. This pattern was also observed in the south-western coastal shell middens, such as Fiais (Lubell *et al.* 2007), which was occupied during the second half of the sixth millennium cal BC, when domesticates were already present in southern Portugal. The same pattern is indicated by a recent macro-botanical analysis. At the moment, a comprehensive programme of sediment flotation developed at Poças de S. Bento (Arias *et al.* 2015) has retrieved exclusively wild species (López-Dóriga *et al.* 2015).

From the Sado Valley perspective, hunter-gatherers do not seem to have been able to readily nor rapidly adopt novel Neolithic elements, even when these were available in southern Portugal. This situation stands in contrast to the classic three-phase model that predicts Neolithic practices to increase after the adoption of a small Neolithic input by hunter-gatherers until the development of a fully productive agro-pastoralist economy (Zvelebil 1996; Zvelebil and Lilie 2000). This may also have been the case with other southern Portuguese hunter-gatherers who do not seem to have been interested in adopting novel elements other than pottery. This cultural indifference also suggests that there were no significant environmental constraints to explain the Neolithization of hunter-gatherers in western Iberia. Had there been such constraints and a 'food crisis', following the Cohen's (1977) model, why did hunter-gatherer groups not bring those new Neolithic resources to their shell middens?

Explanations of the Neolithization process as a *Red Cross* model, *i.e.* as an external solution for western Iberian hunter-gatherer endemic problems, do not fit the archaeological record. It could be argued that cultural restrictions and taboos could have limited the influx of domesticated elements into the Sado and Tagus and the large south-western coastal shell middens, as an inverted *agrios/domus* model (Hodder 1990) would have predicted. On the other hand, if a real nutritional problem existed, as some proxies seem to indicate at least for some areas of southern Portugal (Valente 2014), it is difficult to understand why domesticated species, animals in particular, were so obviously not accepted.

As is clear from Figure 108.2, relations between hunter-gatherers and Neolithic groups in western Iberia were not about eco-economic issues, but they developed around 'material culture', attending to pottery transfers as the sole element of the Neolithic package that migrated to Mesolithic environments.

The rarity of Neolithic items in the Sado shell middens suggests active forms of cultural resistance for over 500 years. The question of why these hunter-gatherers stopped resisting at a certain moment in time and why traditional Mesolithic sites were abandoned without any signs of the Neolithization by the end of the sixth/first quarter of the fifth millennium cal BC should be addressed.

For the moment, it is not clear why large shell middens were abandoned. There were no significant environmental changes that could explain this turnover in the cultural landscape. Climatic reconstructions rather point to a regional sea level transgression underway after the Mesolithic occupation of the Sado Valley (*e.g.* Dias *et al.* 2000), meaning that the estuarine environment that had been exploited for more than one millennium by hunter-gatherers remained stable.

In sum, Zvelebil's (1996) three-phase model, built for another area in Europe where a hunter-gatherer presence was strongly documented and where cultural contacts between different lifestyles occurred, may need some adjustments to fit the archaeological record of western Iberia. If the *availability phase* is not well documented, the *substitution* and *consolidation* phases envisaged by the model are difficult to recognize in the archaeological record. Interestingly, from a genetic perspective, Neolithic populations in western Iberia seem to have carried local hunter-gatherer haplogroups (Fernández and Arroyo-Pardo 2014; Olalde *et al.* 2015). And even if the Mesolithic cultural legacy among Neolithic groups is not well defined, some cultural traits are shared by both populations, such as the presence of lithic segments and the use of microburin technique (Diniz 2007), suggesting that cultural and demic transmission occurred between these two worlds despite the apparent scarcity of archaeological evidence.

Concluding remarks

The Sado Valley presents a historical case of cultural resistance towards Neolithization. For the moment, only pottery and a few polished stone axes have been recorded in the Sado shell middens. However, it has clearly been demonstrated by new absolute dates on human remains

(Peyroteo-Stjerna, 2016, 275, 346) that some of these sites were episodically used during the Neolithic period, in agreement with the previous analysis of pottery typology (Diniz 2010). In contrast, at the mouth of the Sado River, the shell middens of Comporta, which were clearly founded by Neolithic groups, contain not only pottery but also domesticates, even if in small frequencies (Soares and Silva 2013, 157). This situation suggests that only the traditional Mesolithic areas, such as those occupied in the innermost part of the Sado paleoestuaries, resisted the domesticated world of the *agrios* (*sensu* Hodder 1990).

Acknowledgements

This study was made possible by the Spanish Ministry of Economy and Competitiveness (HAR2011-29907-C03-00, subprojects 01, 02, and 03 and HAR2014-51830-P), the Portuguese Fundação para a Ciência e a Tecnologia (FCT) (PTDC/HIS-ARQ/121592/2010), and the Direção Geral do Património Cultural (DGPC). We also thank Ana Costa from DGPC – Laboratório de Arqueociências, LARC/CIBIO/InBIO for helping with the maps in Figure 108.2.

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Foraging Assemblages is the publication of the proceedings of the Ninth International Conference on the Mesolithic in Europe, held in Belgrade in September 2015. The two volumes of these proceedings gather 121 contributions on Mesolithic research in Europe, covering almost every corner of the continent. The book presents a cross-section of recent Mesolithic research, with geographic foci ranging from the Mediterranean to Scandinavia, and from Ireland to Russia and Georgia. The papers in the volumes cover diverse topics and are grouped into 11 thematic sections, each with an introduction written by prominent Mesolithic experts. The reader will learn about changes in forager lifeways and the colonization of new territories at the end of the Ice Age and the beginning of the Holocene warming; the use of diverse landscapes and resources; climatic instabilities that influenced patterns of settlement and subsistence; the organization of settlements and dwelling spaces; the formation of regional identities expressed through various aspects of material culture and technologies of artefact production, use, and discard; aspects of social relations and mobility; symbolic, ritual, and mortuary practices; diverse ways in which Mesolithic communities of Europe were transformed into or superseded by Neolithic ways of being; and how we have researched, represented, and discussed the Mesolithic.

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