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Settlement Dynamics in the Southeastern Quadrant of the Iberian Peninsula during the Early Bronze Age (ca. 2200–1500 BC)

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Abstract

During the Early Bronze Age (EBA), a relatively small number of European societies developed into highly centralised and hierarchical political entities. Despite the intensive research focused on these groups, little attention has been paid to their relationship with neighbouring populations, which had a much more egalitarian structure. In the southeast quadrant of the Iberian Peninsula, over a century of research on the EBA (ca. 2200 – 1550 BC) communities has failed to identify distinctive traits leading to the definition of archaeological entities beyond the El Argar group, which according to many authors reached the form of an early state organisation around 1750 BC. This study aims to go beyond previous culturalist approaches and to focus on how communities with very different social organisations interacted in this macro-region as well as in a border region between El Argar and La Mancha. To that effect, we analyse primarily settlement size as an expression of the demographic and economic strength of a community, and ‘enrockment’ (enrocamiento), a concept that defines the degree of protection and spatial distancing of a settlement from its surrounding land and neighbouring communities. This large-scale comparative approach reveals the distinctiveness of highly dispersed and well protected communities settling in the belt immediately north of El Argar and shows how this cost-intensive strategy changes with increasing distance from El Argar, when flat land and often larger settlements become dominant. The combination of settlement patterns and economic organisation also highlights the marked differences between El Argar and all the other communities living in the Iberian Peninsula.

Keywords: Big Data, Early Bronze Age Iberia, Settlement Archaeology, Spatial Analysis

Introduction

Towards the end of a highly dynamic third millennium BC, marked by outstanding collective efforts in monumental construction and population movements, new sociopolitical forms of organisation, usually regarded as distinctive entities of the Bronze Age, began to emerge in Europe (Haak *et al.* 2015; Risch and Meller 2015; Olalde *et al.* 2018). During the Early Bronze Age (EBA – ca. 2200–1550 BC), however, only a relatively small number of Mediterranean and European societies developed into large-scale, centralised and highly unequal economic and political entities organised around urban or proto-urban settlements, notably palatial Minoan Crete, the so-called tell societies in the Carpatho-Danubian area, the Únětice group in central Europe and the El Argar group in southeastern Iberia.

There is general agreement that these societies were not states in the same fashion as those in Mesopotamia and Egypt. The increase in archaeological evidence, however, indicates that most of them, around 1850–1750 Cal BC (corresponding to Middle Minoan IIB [Knappet 2012], Únětice 3 [Meller 2019] and transitional El Argar 2–3 [Lull *et al.* 2011]), reached significant levels of economic and political centralisation and developed social asymmetries, which remained unparalleled in many parts of Europe until the Iron Age. Beyond their definition as early, segmented, proto- or micro-states, these entities are clearly recognisable over territories of several thousands of square kilometres through a distinctive architecture and settlement pattern, including palatial or monumental buildings covering surfaces of hundreds of square metres, normalised funerary practices that sanctioned the investment of outstanding wealth in a small number of graves and a complex supra-domestic economic organisation depending on the circulation of staple foods and raw materials, such as metals. After a highly dynamic phase of economic take-off, these early state structures dissolved between 1600 and 1450 cal BC (Risch and Meller 2015), which makes their trajectory qualify as ‘disruptive’, in the conceptual sense that has been usefully used in domains such as technology, sociology, genetics and art history.. In archaeological contexts, disruptive societies can be defined as highly dynamic and innovative entities that achieved exceptional economic and demographic growth over a certain period, followed by a sudden and profound collapse and the emergence of markedly different archaeological clusters.

Much less attention has been devoted to the relations between these disruptive societies and the EBA communities surrounding them. The differences between these communities and the regions and findings highlighted in most discussions on EBA Europe and the Mediterranean are too sharp—in terms of settlement complexity, stability and size, wealth accumulation, and productive strength—to be regarded as mere casual outcomes of an intrinsic social diversity or of insufficient archaeological research. Possibly, both EBA ‘realities’ were much more interconnected than usually acknowledged, as is implied, for example, by the long-distance circulation of raw materials such as metals, amber or ivory (e.g., Schuhmacher 2012; Kaul 2018; Nørgaard *et al.* 2021; Bunnefeld *et al.* 2023).

We suspect that a better understanding of the apparently highly diverse EBA forms of social organisation requires overcoming the traditional culture- or region-focused perspectives (e.g., the circulation of high-value, so called ‘prestige’ objects) in favour of emphasising the study of the relations between disruptive societies and their neighbouring communities with regard to their socioeconomic organisation. It can be expected that the exceptional surplus production observed among EBA disruptive societies (e.g., Risch 2002; Schoep *et al.* 2012; Risch *et al.* 2021) required substantial amounts of raw materials, goods and workforce, which probably were not only siphoned

off from their core territories but required the interaction and exploitation of neighbouring communities. Such a phenomenon has been observed in many core–periphery relations since Rosa Luxemburg (1913) identified this mechanism of economic growth in her seminal work *Die Akkumulation des Kapitals*. Peripheries, however, should not be reduced to passive entities exposed to the needs of states, but instead regarded as active communities interacting with, resisting and, whenever possible, profiting from their economically more powerful neighbours. Archaeology should devote the same efforts to the identification and understanding of ‘escape economies’—that is, strategies of resistance against exploitative states (Scott 2009)—as it has done with early states. The main requirement for such an approach is the availability of abundant settlement and productive evidence, as is the case in the southeastern quadrant of the Iberian Peninsula after more than a century of excavations and survey work.

The present study seeks to tackle these issues from a new perspective, by comparing EBA settlement dynamics in the different parts of the southeastern quadrant of the Iberian Peninsula, an area comprising 212,000 sq km (Figure 1). The main objective is to broaden the current understanding of the new settlement pattern emerging at the transition from the Copper Age to the EBA and to examine the similarities as well as differences between the human groups inhabiting this vast area between *ca.* 2200 and 1550 Cal BC. For this purpose, first the settlement dynamics in El Argar are examined, and then for contrast in the southern Iberian Meseta and the Spanish Levante. After that, the focus shifts to a concrete frontier region located at the crossroads of both social areas. Finally, the macro-regional trends and their possible sociopolitical implications are discussed, drawing from the settlement evidence reviewed.

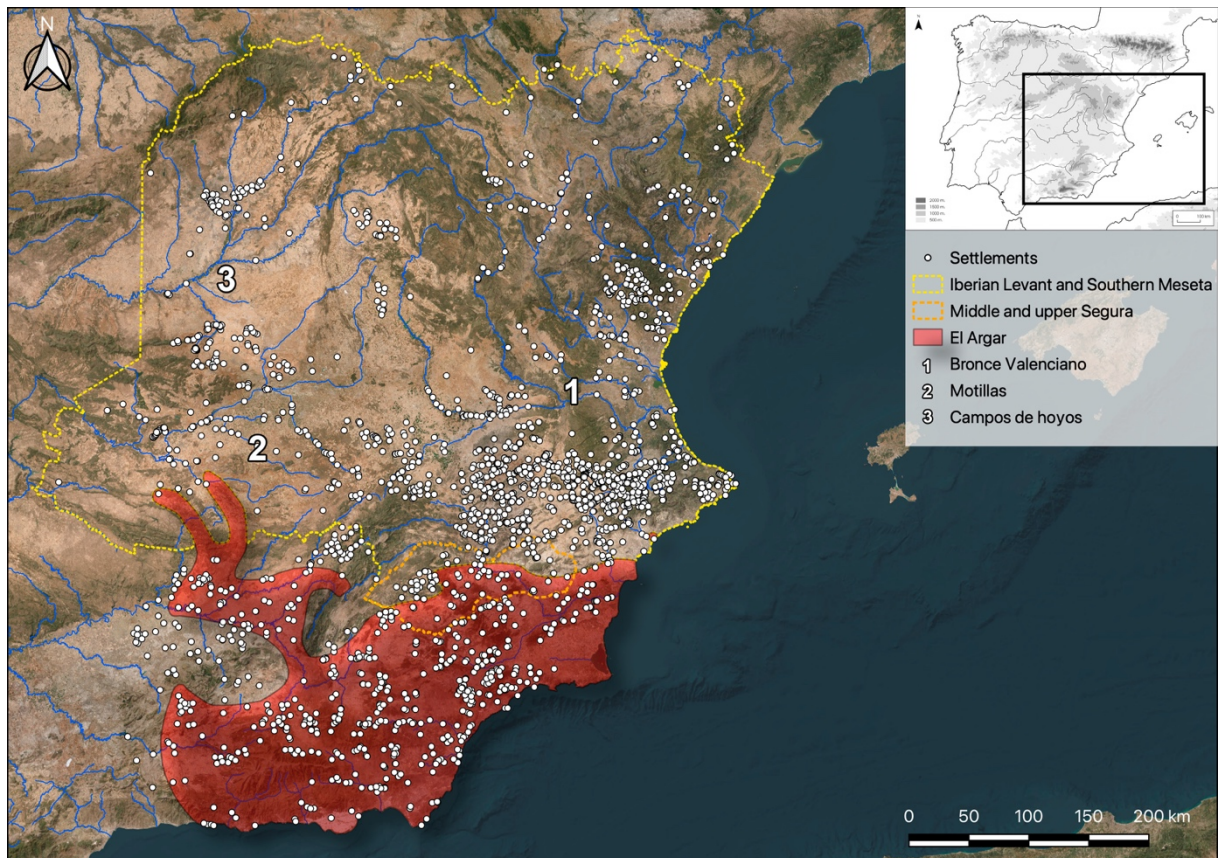


Fig. 1 Early Bronze Age settlements of the southeast quadrant of the Iberian Peninsula (2200-1550 Cal BC).

The Archaeological Setting

In the southern half of the Iberian Peninsula, the transition between the Chalcolithic and the EBA was a moment of profound social change. Ditched macro-settlements, fortified sites and collective graves, all typical of the Copper Age, were abandoned and replaced by new settlement forms (Lull *et al.* 2015; 2020). In southeast Iberia, the local Copper Age, often identified with the exceptional site of Los Millares, gave way to El Argar, a society characterised by its unprecedented levels of social stratification and political complexity. The levels of social inequality reached by El Argar have led many scholars since the mid-1980s to classify this group as a prehistoric state (Lull and Estévez 1986; Lull and Risch 1995; Arteaga 2000; Cámara 2001; Chapman 2003; Lull *et al.* 2010; Cámara and Molina 2011). It should be noted that this characterisation is based on a conceptualisation of the state as an institution that fixed and perpetuated relations of social exploitation by means of physical and psychological coercion (Lull and Risch 1995: 108). The consideration of El Argar as a state-level society has been postulated on the basis of four main arguments: the inequalities between members of that society as revealed by the funerary record; the appearance of a male class that held the monopoly of violence; a highly centralised organisation of metallurgical production; and the development of a vertical system of production based on the control of cereal surplus by elites.

Argaric funerary practices shifted away from the previous Copper Age collective tradition and towards intramural individual or double burials placed inside settlements. The differences in grave goods between burials have been studied statistically and lead to the proposal of a social organisation based on social classes (Lull and Estévez 1986; Lull *et al.* 2011). Furthermore, the existence of numerous child burials with abundant and/or valuable grave goods indicates that social position in El Argar was inherited (Lull *et al.* 2005). Finally, the recurrent association of some male burials with specialised weapons such as halberds or swords suggests that, for the first time, the dominion of violence was restricted to a select group of men (Lull *et al.* 2017).

Metallurgy is another domain in which the complexity of the Argaric political organisation can be observed. This is shown by the concentrated evidence of smelting and melting in a small area around the Sierra Morena range, from where the vast majority of Argaric settlements may have been supplied with copper and silver. This region is also the only one in southeast Iberia in which EBA copper mines have been documented (Arboledas and Alarcón 2018; Arboledas *et al.* 2022), while the Copper Age mining at Cerro Minado (Almería) seems to have become of minor importance (Delgado-Raack *et al.* 2014). Moreover, Peñalosa, the main Argaric site in the mining district of La Carolina and Linares (Sierra Morena), is the only one in which the full *chaîne opératoire* of metallurgical production has been documented (Moreno Onorato and Contreras 2010). This all manifests the tight control of production and distribution of metallic objects at a supra-regional scale (Lull *et al.* 2010; Delgado-Raack *et al.* 2016).

The development of a vertical system of production based on the appropriation of cereal surplus by large centres located far away from areas with high agricultural potential has also been highlighted. This exploitative relation is inferred from the accumulation of the means of production (mostly grinding stones, barley grain and storage structures) and specialised workshops in a few, regularly placed, central settlements (Lull and Risch 1995; Risch 1995; 2002; Verhagen *et al.* 1995; 1997). To this inherently exploitative system we should add the expansionism of El Argar, which grew in 450 years from a core area of less than 5000 sq km in 2200 Cal BC to controlling a territory of almost 35,000 sq km by 1750 Cal BC.

Some authors have questioned the classification of El Argar as a state. Perhaps the most notable among them is Gilman, who considers the extent of its social inequality insufficient for it to be so designated (Gilman 1976; 1981; 2001; 2013). Others have questioned the rigidity of the current state model for El Argar (Aranda 2013), mainly on the basis of the presence in the Argaric territory of EBA interments in earlier megalithic burials (Aranda *et al.* 2020; Milesi *et al.* 2023). However, there is a general agreement that El Argar developed into a society with a significant degree of social asymmetries and exceptional economic force in the western Mediterranean. Hence, analysing how this materially and structurally well-defined entity interacted with other societies with a more horizontal social organisation remains a critical topic for an understanding of both.

In contrast with El Argar, farther north the Iberian Levant and the southern Meseta was occupied by what have been considered smaller-scale and more egalitarian groups. These communities have been labelled in the traditional bibliography as Las Motillas culture in the La Mancha plain (Nájera 1984) and *Bronce Valenciano* in the Levante (Fernández Vega 1985; Jover Maestre 1999; Jover Maestre *et al.* 2018a), and identified with *campos de hoyos* (pit fields) in the centre of the peninsula (Díaz Del Río 2001), *poblados de altura* (hilltop villages) in the Toledo Mountains (Ruiz Taboada 1998) and *morras* in eastern La Mancha (Fernández-Posse *et al.* 2008). In contrast to the situation in El Argar, regional studies so far have not managed to associate a specific archaeological materiality with any of these supposed entities, basically due to the non-specificity and scarcity of funerary practices, complex architecture and artefact types. Precisely to avoid the current difficulties in fitting a diverse archaeological record into cultural and regional units, our study has opted for a radical change of perspective, towards a macro-spatial analysis without cultural or regional barriers in those spaces where evidence of surplus accumulation and investment in hierarchical settlement and burial practices are hard to find.

Materials and Methods

Our research encompasses an area of approximately 212,000 sq km, of which *ca.* 177,000 sq km correspond to the Iberian Levante and southern Meseta groups and 35,000 sq km to El Argar (see Figure 1, above). The groundwork for the macro-regional study is based on the doctoral research of one of the present authors (Peres 2021), which led to the development of a ‘big data’ settlement database. This has been improved and expanded in subsequent studies (Peres and Risch 2022; 2023a; 2023b) and currently includes 1445 sites with 123,480 collected data entries and an average of 86 information fields for each site. For El Argar, we have relied on published studies on Argaric settlement structure and specifically those that contain information on settlement size (Camalich and Martín 1999; López Padilla 2009; Risch 2012; Martínez Monleón 2014).

This work also includes the study of a frontier zone located between both macro-regions: the middle and upper Segura valley (see Figure 1, above). The data for this section have been collected as part of the doctoral research by another of the present authors (Moreno Gil 2023). The middle and upper Segura was selected for intensive fieldwork as it appeared to be a long-lasting borderland, as well as the closest to the Argaric core. This fieldwork was carried out over an area of *ca.* 4800 sq km and managed to document up to 71 EBA settlements, 21 of which had not been published before.

Although there are different ways to identify political relations in the archaeological record (e.g., van Wijngaarden and Driessen 2022), two main variables and strategies are discussed in this study in combination with the main paleoeconomic and architectonic information so far available in the southeastern quadrant of the Iberian

Peninsula. The first is settlement size, used as an expression of demographic and economic strength, as well as of the organisational complexity of a community. Larger sites and populations require more resources but are also capable of generating and accumulating more surplus, whether through production, exploitation or robbery. Contrary to the centralisation of resources and population in urban or proto-urban sites, settlement ‘atomisation’ will be used as a concept to refer to a highly dispersed spatial pattern of much smaller human communities.

The second strategy has been defined by us as enrockment (Peres and Risch 2022). This refers to the protection and spatial distancing of a settlement from its surrounding land as well as from its neighbouring communities. *Enrocamiento* is used in Spanish in three different contexts:

1. a defensive and protective movement in chess, known as castling in English;
2. protecting something with large rocks (mostly in the realm of engineering works, such as dams);
3. getting jammed or blocked on a rocky place (mostly underwater).

The meaning of enrockment is sufficiently flexible and neutral to address the protection and defence of a community through the occupation of elevated rocky positions as well as through the construction of rock walls, without making any inference about its socioeconomic dynamic. Moreover, it is particularly useful in the rough topographies that characterise large parts of the Mediterranean region. The use of the Italian term *incastellamento* would be misleading in the context of the EBA, as it refers specifically to the building of fortified strongholds and, most importantly, because it has become a central concept in early medieval archaeology and history (Toubert 1973; Wickham 1985). Moreover, in specific territories the degree of enrockment can be established by combining the power of stone defences with the altitude of the settlements above the surrounding (potentially) rain-fed and untterraced agricultural land (Peres and Risch 2022: 62).

Settlement Dynamics in El Argar

Despite all the research attention enjoyed by El Argar, aside from Lull’s (1983) seminal work macro-studies of settlement structure are still lacking. Instead, a series of research projects have focused on specific regions, such as the Vera basin in Almería (Castro *et al.* 1998; 1999; Camalich and Martín 1999; Risch 2012), southern Alicante (López Padilla 2009; Martínez Monleón 2014) or the Rumblar Valley in the mining area of Sierra Morena (Cámara *et al.* 2004; Molina González and Cámara 2009; Moreno Onorato and Contreras 2010). Nonetheless, several common trends across the entire Argaric region can be outlined.

The majority of known Argaric sites are hilltop settlements. They are mostly located on conical hills that were artificially terraced (e.g., Fuente Álamo or Castellón Alto) or, less frequently, on ‘plateau hills’ (*cerros amesetados*) with flat summits (e.g., El Argar, La Almoloya). The internal layout of Argaric settlements is characterised by rectangular, square and apsidal buildings, occasionally forming larger architectonic complexes, constructed using stone-masonry foundations and mud walls, and arranged into dense grids (Figure 2a–b). Monumental or public buildings are common and include tower-shaped structures, probably used for cereal storage or processing or as water reservoirs, or built as complex fortifications. The large Argaric settlements extend between 1 and 4 ha, although in some exceptional cases, such as Lorca, this figure could increase to over 10 ha (Fontenla *et al.* 2004). Despite the apparent predominance of hilltop settlements, unfortified flatland settlements have also been discovered (e.g., Rincón de Almendricos). These are normally interpreted as small hamlets or farms

geared towards agricultural production. Their original number and importance are difficult to estimate, as intensive erosion/sedimentation processes have profoundly altered the valley bottoms of southeast Iberia during recent millennia and centuries (e.g., Hoffmann 1988; Silva *et al.* 2008).



Fig. 2 a) Argaric settlement of La Almoloya (courtesy of the ASOME-UAB research group); b) Argaric settlement of La Bastida (Lull *et al.* 2014a: fig. 3); c) La Mancha settlement of Motilla del Azuer (Peres 2021: fig. 2.65); d) Valencian settlement of Pic dels Corbs (Peres 2021: fig. 2.80); e) Frontier settlement of Los Molinicos (Moreno Gil 2023); f) Frontier settlement of El Moreral (Moreno Gil 2023).

The earliest settlements with an El Argar materiality can be identified *ca.* 2200 BC in the coastal region between northeastern Almería and southern Alicante, covering some 4500 sq km (Lull *et al.* 2015; Hernández Pérez *et al.* 2021). This territory expanded during the following centuries, especially towards Granada in the west and the central part of Mancha in the northwest. The territorial growth towards the eastern part of La Mancha and to the northeast, along the Mediterranean coast, was much more limited. Such differences might be due to the different orographic conditions of western Iberia compared to its eastern counterpart, but probably also to the forms of social organisation faced by El Argar in its effort to integrate these regions in its territory. Between 1750 and 1650 Cal BC, the network of large El Argar hilltop settlements seems to have reached its maximum expansion, covering an area of about 35,000 sq km (Lull *et al.* 2011). Around 800 sites have been identified in this territory as belonging to El Argar. It is probable, nonetheless, that a few small pockets of resistance might have existed

within the Argaric context, especially in the mountain regions of Sierra Nevada / Alpujarras and Sierra Cazorla, of which the remote settlement of Peñon de la Reina (Albodoluy, Almería) is the best known example (Martínez and Botella 1980).

Based on data from different Argaric subregions, several models of settlement patterning have been proposed. The first, which draws mainly on data from the Vera basin and the Guadalentín river valley, envisions a three-tiered settlement hierarchy (Lull *et al.* 2010; 2011). The pinnacle of this hierarchy might have been occupied by political centres, i.e., settlements of between 1 and 3 ha (or even larger, e.g. Lorca and La Bastida) that were usually located in the foothills of mountain ridges. The location of these sites favoured strategic control and defence over access to agricultural land, and it has been argued that they could have acted as nodes that organised the territory at a political level; certainly, they controlled exchange networks and were in charge of supplying smaller sites with manufactured goods. Furthermore, these political centres accumulated large amounts of raw materials and tools (grinding stones, metals, flint sickles, textiles, bee products, etc.) that were later redistributed to dependent settlements (Risch 2002; Ache *et al.* 2017). The relatively regular spatial distribution of the central hilltop settlements along the valleys of southeast Iberia, the study of the provenance of their lithic resources (Risch 1995; Delgado-Raack 2008) and the modelling of their agricultural territories based on demographic proxies has led to the proposition that large, 1–3 ha settlements, such as Fuente Álamo, Gatas or El Oficio, controlled territories of 100–500 sq km (Risch 2012). By contrast, the large, 4.5 ha fortified site of La Bastida probably dominated the resources and population of some 3000 sq km (Lull *et al.* 2014a).

The second tier corresponded to smaller hilltop sites, around 0.5 ha in extent, that were strategically distributed throughout the territory. They have been interpreted as satellite settlements, dependent on one of the higher-ranking settlements (Delgado-Raack 2008: 597-608). Flatland sites, tasked with agricultural production and consisting of only a few dispersed dwellings, would have been at the bottom of the hierarchy.

The second model is based on the Argaric settlements of Alicante (López Padilla 2009; Martínez Monleón 2014). Similar to the previous proposed model, the top tier is occupied by political centres above 1 ha. Second-tier settlements, between 0.5 and 1 ha, would have accomplished a dual function of controlling important natural resources and key communication routes leading into Argaric territory. Finally, the third category might have included the smaller and most numerous sites, which would have concentrated on the exploitation of local resources, mainly agriculture.

A third model of Argaric settlement patterning has been developed for the upper Guadalquivir and the Rumblar river valley. In this case, the control of copper and silver outcrops would have played a determining role in the territorial structuration of the settlements. Using geomorphological criteria expressed as statistical indexes as well as settlement size, a multitiered settlement organisation has been proposed for this region too, with up to five differentiated settlement types (Cámara *et al.* 2004). These may have fulfilled different roles: some would have focused on the extraction and processing of metal ores, while others, interpreted as forts, might have been geared towards territorial control. In this model, larger central sites would have been in charge of agricultural production. This complex settlement system has been used to postulate, also in this region, the existence of a hierarchical settlement pattern structured around the control of the most important metallurgical area of the Iberian southeastern quadrant, which probably supplied a large part of the demand for metals in the whole of the El Argar territory (Lull *et al.* 2010; 2014b; 2018; Moreno Onorato and Contreras 2010).

Despite slight differences between the models proposed, some general similarities are clearly distinguishable. Foremost is the tendency towards occupying naturally defended hilltops and/or protecting settlements with defensive structures. This process contrasts with the previous Copper Age tradition, characterised by settlements located much closer to the valley floors and rivers. Nuclearisation seems to be another trend present in El Argar, where the population tended to cluster in medium and large settlements. In that sense, settlements above 1 ha are frequent within the Argaric area and their distribution appears to have been rather uniform. Finally, an emphasis on territorial and resource control seems to have informed the settlement strategy followed by the El Argar communities.

This picture has been nuanced further by recent excavations in Tira del Lienzo and La Almoloya. These have revealed that size is not always a direct reflection of the political and economic importance of Argaric settlements. The former site is a fortified architectural complex with a total area of only 865 sq m, crowned by a central building of some 100 sq m in which, among other means of production, a set of silver forging tools were identified (Delgado-Raack *et al.* 2016). The production of silver ornaments links Tira del Lienzo to Argaric elite burials, like Tomb 38 found in the 0.3 ha site of La Almoloya (Lull *et al.* 2021). While the architectural outline and the archaeological record of Tira del Lienzo hints at an administrative centre, located in the fertile floodplain of the lower Guadalentín, the last building phase of La Almoloya fulfils the criteria of a palatial site (de Miroschedji 2015).

In sum, the highly variable size and architectural outline observed among the El Argar settlements thus far excavated manifest a degree of socioeconomic complexity unnoticed in any other EBA entity not only in Iberia but also in Europe as a whole, with the exception of the Aegean islands. The interdependency between this apparent myriad of Argaric settlements becomes manifest through a clearly recognisable redistributive economy, controlled by the major hilltop sites, where the means of production and resources were organised in large, supra-domestic workshops and storage facilities (Risch 2002; Delgado-Raack 2008; Ache 2019). The centralised accumulation and transformation of surplus value in a vertical mode of production also explains the marked productive uniformity visible in El Argar pottery, metals and, probably, textiles, which is a further expression of the settlement interdependency.

Settlement Dynamics in the Iberian Levant and Southern Meseta

If the organization of settlements and productive forces in the Argaric territory seem to be the result of a state-like socio-productive system with a high degree of centralisation, the situation to the north of El Argar is much more diverse and dynamic.

The first remarkable result of our macro-scale approach has been to verify that 89% of the sites north of El Argar are new EBA foundations, unoccupied prior to 2300–2200 BC. To understand the causes of such a marked discontinuity with respect to the Chalcolithic landscape, it is necessary to analyse the size and topographic placement of these new social spaces.

Settlement size analysis shows a generalised process of disarticulation and dispersion of the Chalcolithic communities that dwelled in ditched enclosures, fortified sites, low-land open settlements and a great variety of smaller sites. During the EBA the vast majority (83%) of the 1445 recorded settlements did not exceed 2000 sq m. Nearly half of the settlements (44%) were even less than 500 sq m. Only 1.5% of the sites extended over more than 1 ha.

The small dimensions of the majority of sites and the low number of larger ones are contradictory to any form of settlement hierarchy. The social fragmentation suggested by this ‘atomised’ settlement pattern is the most outstanding trait immediately north of El Argar, especially in the provinces of Albacete, Alicante and Valencia, where most of the settlements below 2000 sq m are located (Figure 3). Larger settlements are more frequent to the west and mostly correspond to the extramural part of Las Motillas culture settlements. These highly fortified centres seem to have been constructed as protected places with access to the groundwater table in the otherwise flat and arid landscape of this part of La Mancha.

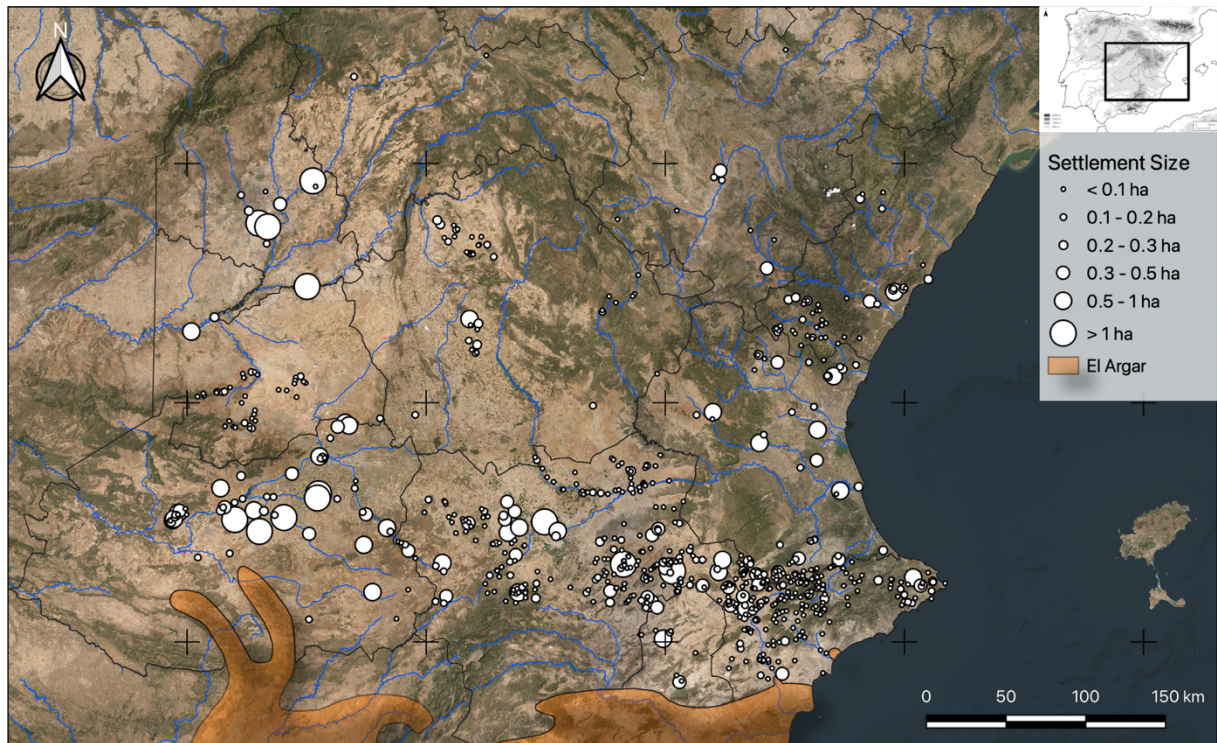


Fig. 3 Size of the settlements between the Iberian Levant and the Southern Meseta (Peres and Risch 2022: fig. 10).

The study of the topographical and architectural characteristics of the settlements in central and eastern Iberia reveals the priority given by the communities north of El Argar to their protection by occupying easily defendable locations. Incidentally, the effort to strengthen defences through the construction of more so or less complex architectural barriers is also remarkable. Specifically, 54 of the 1445 identified sites, including caves, are fortified lowland settlements (e.g., *motillas*), 680 are high-altitude settlements without fortifications and 335 are fortified high-altitude settlements. In sum, more than two thirds of the settlements (79%) of the Iberian Levante and the southern Meseta are either fortified or placed on elevated, well-protected positions, or both (see Figure 2c, d, above). The mean relative altitude of these enrocked settlements above the surrounding (potential) rain-fed and untterraced agricultural land is 25 m in the northernmost provinces of Madrid, Guadalajara, Teruel and Castellón, and 100 m in the latitudinal strip that joins Alicante with Ciudad Real in the south. Between Albacete and the Mediterranean, 49 sites are located 150–200 m above the valley, and in a further 41 the relative altitude exceeds 200 m (with cases of up to 400–450 m in the southeast).

The differential geographic distribution of the settlements with defensive barriers and the highest maximum relative altitude (Figure 4) is proof of the complementarity of these two defensive strategies and of a greater level

of enrockment in the territories immediately north of El Argar, where the atomisation of settlements is also the highest (see Figure 3, above). The persistence of such high levels of atomisation and enrockment of the population in the proximity of El Argar points to a situation of social conflict and intergroup instability that started around 2300–2200 Cal BC, and lasted for centuries until the sudden collapse of El Argar *ca.* 1550 Cal BC.

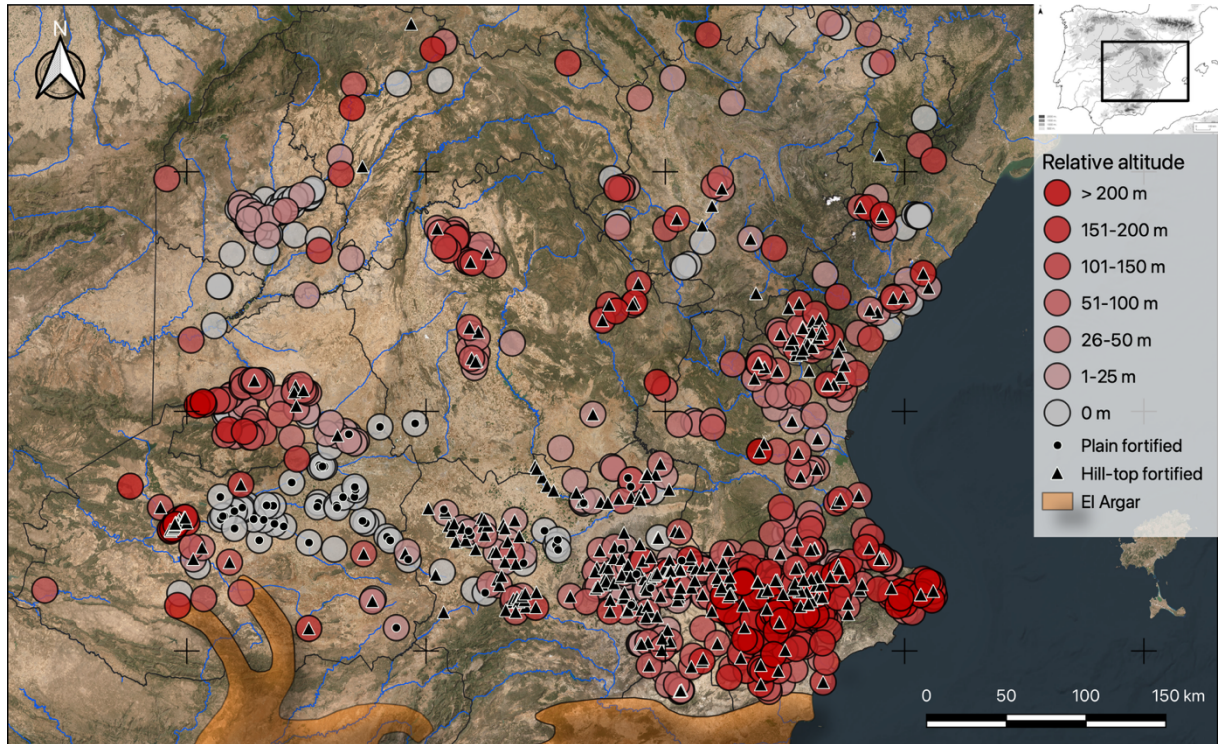


Fig. 4 Relative altitude and stone defences of the settlements between the Iberian Levant and Southern Meseta (Peres and Risch 2022: fig. 8).

While El Argar communities were structured around a vertical mode of production easily recognisable over a wide territory through the concrete organisation of its means of production and through its products, the situation observed to the north appears to have been much more fluid (Peres and Risch 2023). None of the means of production were restricted to a specific region, to larger settlements or to those with defensive positions or structures. Particularly revealing is the transversality of textile production, marked by the presence of loom weights, or metal working, as indicated by crucibles, moulds and forging tools, which appear in all types of settlements. The main differences, once again, follow a north–south gradient marked by the distance from El Argar. Contrary to what one would expect from the settlement pattern, the highly atomised and enrocked settlements in the south show a clear concern with agricultural production, as defined by the presence of sickle blades and grinding stones. Towards the north, where communities were able to settle in lowland positions with no defensive structures, an increase in the importance of artefacts related to cattle holding and hunting is observed (Peres and Risch 2023).

Settlement Dynamics in a Frontier Region: The Middle and Upper Segura

As in the previously examined regions, almost all the settlements from the middle and upper Segura are located on hilltops, with only a single flatland establishment identified (Figure 5). Typically, the EBA settlements of the

middle and upper Segura are located almost 100 m above the valley floors, the overall average of 96.62 m being almost identical to that of the southern sites of the Iberian Meseta and Levante. In some extreme cases, however, settlements were located at relative altitudes well above 200 m. The archaeological survey also revealed that, despite the high position in which most of the settlements were found, this did not always correlate with an optimal visual control. This suggests a pattern in which many communities prioritised occupying a discrete or concealed position over enjoying large territorial control.

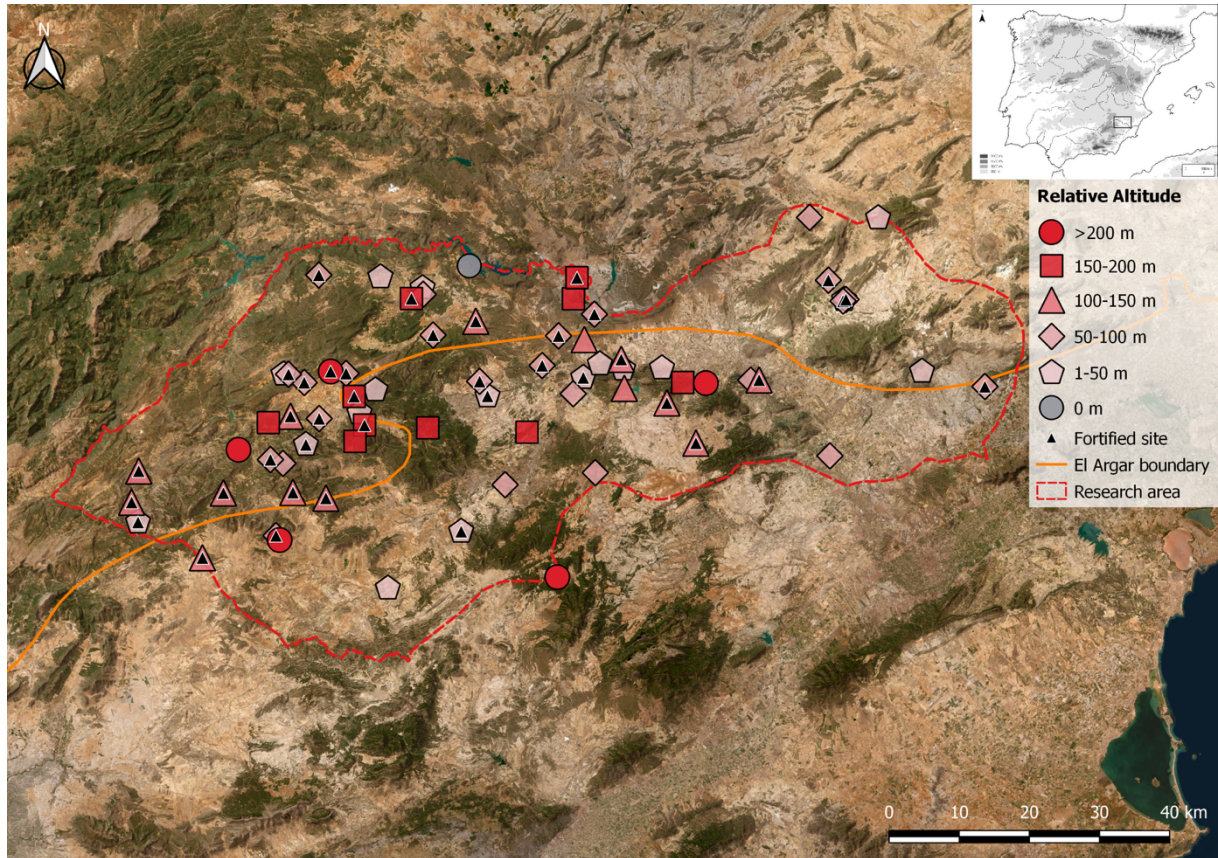


Fig. 5 Relative altitude of the middle and upper Segura settlements (Moreno Gil 2023).

The typology of settlements encountered does not include any novel settlement type. If anything, it is worth noting that the most idiosyncratic settlement types from the Meseta, namely the fortified *motillas* and hilltop *morras*, were completely absent. The most ubiquitous settlement type ($n = 33$) is that found on conical hills, which have been regularised through artificial terraces. Settlements located on plateau hills naturally bounded by cliffs or ridges (*cerros amesetados*) are also quite common ($n = 24$). The occupation of rocky spurs has also been attested ($n = 9$). These settlements are located on small rocky protrusions (of less than 500 sq m) or occupy one end of a larger plateau hill which is then artificially closed with a semicircular enclosing wall.

Defensive structures also played an important role among the middle and upper Segura sites. Almost 56% of the settlements studied had some sort of defence-improving structure. A comparative analysis of settlement size and the presence of defensive structures has shown that walls were present in settlements of all size ranges. Moreover, it is notable that many of the settlements in which no defensive structures could be documented were located at high relative altitudes or were naturally protected by cliffs or other forms of natural defence.

In terms of size, the overall average for settlement area is 2068 sq m. Again, though, most sites (68%) do not exceed 2000 sq m and around one fifth (21%) cover less than 500 sq m. Large settlements above 1 ha are rare (6%). These values confirm that the middle and upper Segura hold an intermediate position between El Argar, with larger settlements and highly atomised groups farther north. Remarkably, two spatially differentiated geographical patterns are observable in the middle and upper Segura: on the one hand, the southern part has a lower number of larger sites, including all of those above 1 ha, but on the other, the northern part has a higher number of sites of smaller dimensions (Figure 6). In other words, it appears that two antagonistic settling strategies existed next to each other: one that tended towards atomisation in the north, and another towards nuclearisation in the south.

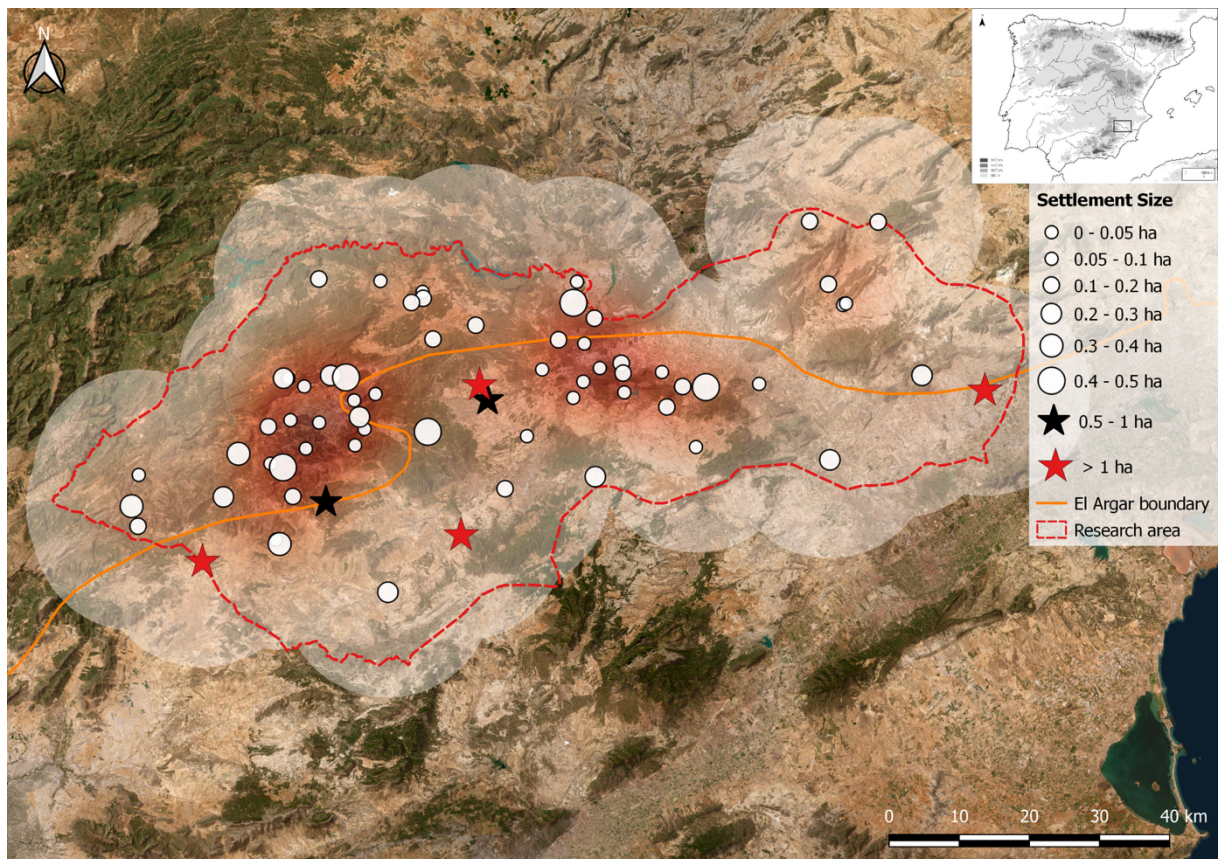


Fig. 6 Settlement size in the middle and upper Segura (Moreno Gil 2023).

The divide between north and south is also visible in the geographical distribution of settlements. Smaller settlements concentrate into two clusters in the north, whereas large sites appear much more isolated (Figure 6). These north–south differences are further reinforced by the archaeological record. In the south, Argaric objects are predominant and include some very idiosyncratic elements such as metallic garments, weapons and characteristic pottery vessels, such as chalices or finely burnished carinated shapes and large pithos jars. Intramural single or double burials, another distinctive feature of El Argar, are again much more common in the south. Both the settlement patterns and the archaeological features thus confirm that the middle and upper Segura functioned in the EBA as a borderland in which human communities with very different social organisations converged. All these differences crystallised into two clearly differentiated productive models, and in the south a vertical model emerged and consolidated, with large settlements acting as political and economic nodes. It was precisely in these

larger sites where most Argaric materials accumulated, revealing that they were tightly integrated into the exchange networks controlled by El Argar. The communities in the north followed a more decentralised model in which, by relying on locally available resources, settlements would have been mostly self-sustaining. As in many present-day borderlands, the high degree of enrockment and the positioning of settlements in marginal but concealed locations may be evidence of a situation of latent conflict.

Discussion and Conclusions

The examination of the settlement evidence of the southeastern quadrant of the Iberian Peninsula has made it possible to gain new insights into the social differences and possible relations existing between EBA communities in this vast area. First, the importance of the strategy defined as enrockment is remarkable. It distinguishes these communities from the rest of Iberia but also from most of the rest of Europe, where fortified hilltop settlements are unknown in the EBA or appear around 1700–1600 BC, as in the Alpine region. Throughout the research area, settlements show a very clear concern towards occupying naturally defended hilltops and/or adding artificial defences, albeit with variable intensity. Enrockment becomes less prevalent with increasing distance from El Argar, where lowland and open positions are favoured (see Figure 4, above). Enrockment must have implied notable repercussions in the lives of EBA communities. Compared to the situation observed in the Copper Age or in other parts of EBA Iberia, the perched positioning of small and even tiny communities in the EBA would have added a substantial workload to everyday activities.

Beyond enrockment, settlements in the different regions show clearly divergent patterns as regards their size (Figure 7). In El Argar, settlements between 1 and 3.5 ha are common and show a clear tendency towards nuclearisation, with political territories likely revolving around large central sites. In contrast, more northern areas in the southern Meseta and the Levante have a much more atomised settlement structure.

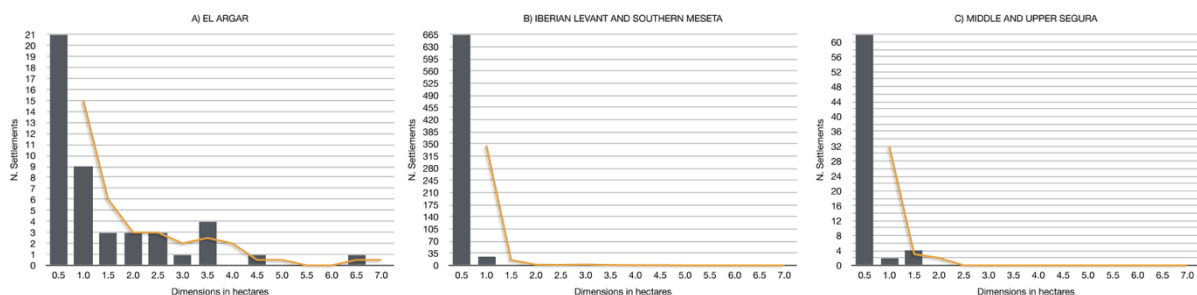


Fig. 7 Graph of settlement dimensions: a) El Argar (nuclear zone between the depression of Vera (Almería) and Alicante (modified from Risch 2012: fig. 1); b) Iberian Levant and Southern Meseta; c) middle and upper Segura.

Another significant difference between El Argar and the communities to the north is the temporality and, as it follows, stability of settlement placement. According to an ample series of 14C dates as well as stratigraphical data, most Argaric sites remained occupied until the final collapse of the state around 1550 BC (Lull *et al.* 2013; 2015). This implies occupations of some 650 years for the sites in the core area and of 400–500 years for most of the settlements in the areas of successive Argaric expansion, mainly towards the present-day provinces of Granada

and Jaen in the west. Conversely, the available absolute dates of the Meseta and the Levante show occupations averaging 125–170 years (Peres and Risch 2022). Only the occupation phases of the larger-sized and fortified *motillas* are comparable to El Argar. Most communities seem to have preferred or been forced to change their dwelling space from time to time, which again can be interpreted as a sign of economic and/or political instability, or a complementary escape strategy in the periphery of the state.

The differences identified regarding size, architectural complexity, occupational stability and centralisation of the means of production across the research area can be interpreted as the materialisation of two markedly different sociopolitical entities with opposed internal structures. The emergence and consolidation of El Argar and its expansionist trajectory, with acute social stratification, triggered a period of ever-increasing intra- and inter-community tension and conflict in the southeastern quadrant of the Iberian Peninsula. Defensibility rapidly became of utmost importance for human communities, regardless of ‘which side of the border’ they were located. In that sense, the nuclearisation and expansive nature of El Argar come across as an effective strategy that facilitated the control of larger populations and resources by a dominant class. Concomitantly, the population dispersal and enrockment followed by the communities north of the El Argar border appear to have been successful ploys used by stateless communities to avoid and resist the assimilation by a state, similar to the ‘escape economies’ described for historical times in other parts of the world (e.g., Scott 2009).

This antagonistic situation can be observed clearly in the frontier region of the middle and upper Segura, where the two forms of organisation coexisted in a small territory and defined a border between Argaric and non-Argaric communities. In this region, the settlement evidence discussed is further reinforced by recently published data on osteological markers of violence. Individuals with sharp trauma, likely caused by blades, have been documented in El Morrón (Oliart 2020), a site in the middle and upper Segura, as well as in Caramoro (Jover *et al.* 2018b) and Cerro de la Virgen (Ortega 1989: 121), both located nearby, and also in the frontier territory of El Argar. Furthermore, the recently published excavations in Cerro Morrón, also within the middle and upper Segura, managed to identify two cases of cranial blunt force trauma on an adult male and female, from which both recovered (Fregeiro *et al.* 2023).

All in all, the rate of cranial trauma in the middle and upper Segura has been shown to be much higher than in any other region of El Argar, with three out of the eight (37.5%) individuals studied affected by it (Oliart 2021: 295). The data on the gender and age of the population affected by violence in the border are not coherent with a ‘ritualised violence’ model suggested for other Argaric regions (Aranda *et al.* 2009), but indicative of a much more indiscriminate pattern. It is true that more osteological studies of individuals from the Argaric borderlands are needed, but the available evidence supports a scenario in which violent encounters were part of the interactions between Argaric and non-Argaric populations.

The limited advance of the El Argar border in the northern and eastern half of its territory seems to signal the success of the enrockment and atomisation strategies followed by these communities in order not to be integrated into the El Argar vertical mode of production, in contrast to the expansion visible to the west and northwest. In order to understand better these conflictive attraction/resistance relationships between El Argar and its peripheries, it will be necessary to intensify studies on the productive forces and the circulation of raw materials (e.g., metals), of goods (e.g., grain) and of populations. The first archaeogenetic study of biological relatedness among El Argar communities has already confirmed the populations’ movement through the El Argar border (Villalba-Mouco *et*

al. 2022). Isotopic studies on fauna and grain, as well as characterisation studies of metals, will be necessary to define the scope and the degree of asymmetry of this interaction.

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