

RESSOURCENKULTUREN 17

LANDSCAPES AND RESOURCES IN THE BRONZE AGE OF SOUTHERN SPAIN



Editors

Martin Bartelheim,
Francisco Contreras Cortés &
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TÜBINGEN
UNIVERSITY
PRESS 

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Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie, detaillierte bibliografische Daten sind im Internet über <http://dnb.d-nb.de> abrufbar.

Herausgeber der Reihe: Martin Bartelheim und Thomas Scholten



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<http://hdl.handle.net/10900/124863>

<http://nbn-resolving.de/urn:nbn:de:bsz:21-dspace-1248635>

<http://dx.doi.org/10.15496/publikation-66226>

1. Auflage 2022 Tübingen University Press
Universitätsbibliothek Tübingen
Wilhelmstr. 32
72074 Tübingen
tup@ub.uni-tuebingen.de
www.tuebingen-university-press.de

ISBN (Hardcover): 978-3-947251-52-0

ISBN (PDF): 978-3-947251-53-7

Redaktion: Hannah Bohnenberger, Vincent Laun, Carolin Manzke, Uwe Müller, Henrike Srzednicki

Umschlaggestaltung: Henrike Srzednicki

Coverfoto: View from the Bronze and Iron Age site of Mesa Redonda (Sevilla) at the edge of Sierra Morena into the fertile landscape of the lower Guadalquivir valley (Aufnahme: Martin Bartelheim)

Layout: Büro für Design, Martin Emrich, Lemgo

Satz und Bildnachbearbeitung: Henrike Srzednicki

Druck und Bindung: medialis Offsetdruck GmbH Unternehmensbereich Pro Business

Printed in Germany

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Natural Resources, Peasant Rationality and Social Spaces in the Border between El Argar and the Valencian Bronze Age Societies

Keywords: Bronze Age, El Argar, Valencian Bronze Age, agriculture, husbandry, social inequality, goods

Acknowledgements

This work has been carried out within the framework of the research project ‘Social and frontier spaces in the Chalcolithic and Bronze Age periods in the eastern Iberian Peninsula’ (HAR2016-76586-P) funded by the Spanish Ministerio de Economía y Competitividad. We would like to thank Dan Miles for the English revision of this text.

Abstract

This paper will analyse the relationships between the two societies located on either side of the Argaric and the Valencian Bronze Age border. Relationships were developed between these communities and the natural environment they used and transformed, and through their immediate intra-social and inter-social spaces.

The analysis of archaeological evidence shows that the economies of both these societies were based on the principles of peasant rationality. However, through the analysis of the degree of population nuclearisation, organisation and distribution, as well as cultural materiality and differential access to certain resources and products, significant differences can be observed. This

enables us to infer that there were not only fundamental differences in the degree of social development between the Argaric and the Valencian Bronze Age societies, but that there were also economic dependencies between both social spaces.

Introduction

The Argaric and Valencian Bronze Age cultures are two of the most recognised and remarkable later prehistory entities of the Iberian Peninsula (Lull 1983; Jover 1999; Aranda et al. 2015). Archaeological investigations have shown the major socio-economic development of the Argaric culture, to the extent that it has been considered as the focus around which the rest of the neighbouring cultures gravitated. Nevertheless, all these societies were based on a subsistence economy of cultivation and raising livestock. These two economic activities were the key for a section of the society to achieve a greater degree of institutionalisation and consolidated the growing social differences. Peasantry was, in this sense, the driving force of this process.

This paper, oriented from a fallibilist perspective and based on the theoretical framework of Social Archaeology (Bate 1998), aims to explore more deeply the economic rationality of the communities that inhabited the border territories between El Argar and the Valencian Bronze Age culture. Research carried out on a number of archaeological sites has provided good quality sequential, contextual and analytical data. Paleoeconomic and

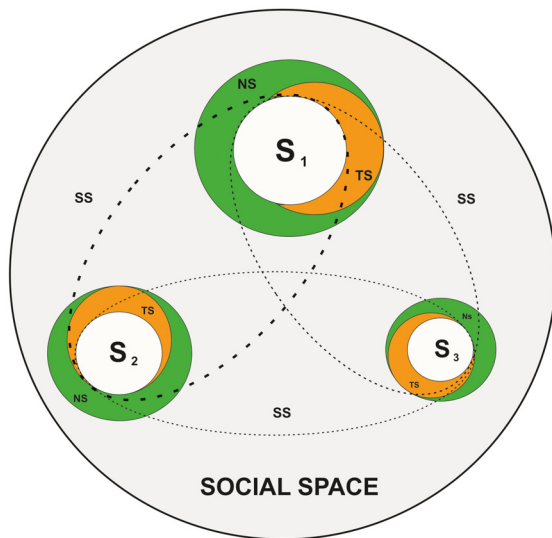


Fig. 1. Theoretical diagram showing settlement units (S) in their social space, with indication of the three spheres of interaction: natural sphere (NS), transformed sphere (TS) and social sphere (SS).

paleoenvironmental studies have enabled us to evaluate and determine which products were obtained directly from the communities' local environment, and which were acquired through inter-societal exchange networks. This analysis can help us understand better the degree of socioeconomic and political development of each of these two social entities.

Theoretical Framework

Working the land was what underpinned the Argaric and Valencian Bronze Age societies, and given that the lands most suitable for agriculture were dispersed, the communities, which established themselves around these lands, were also widely distributed across the landscape. This landscape therefore was predominantly characterised by dispersed villages and farms that were located next to the lands being exploited by each community (Díaz-Polanco 1977; Toledo 1981; 1993).

In terms of production and consumption, each peasant group or production unit had three different spheres of interaction, from which they could obtain the necessary resources to reproduce (Toledo 1981). The first of these was the natural

environment (natural sphere) which was the natural, non-transformed ecosystem, located around the settlement sites, for example forests, steppes, rivers or rocky outcrops. The second was the transformed environment (transformed sphere) which included cultivated lands, pastures, mines and quarries, and finally the social environment (social sphere), which refers to the relationships through productive and reproductive ties with other nearby domestic groups (Toledo 1981, 130) (*fig. 1*).

Through the investment of labour in the natural sphere and transformed sphere each domestic group could obtain sufficient resources for their own consumption, which could be transferred in various ways to the social sphere. These groups would have been established social relationships built on affective relationships, reciprocity, direct symmetrical exchange and deferred exchange. In this way, through established social processes, different products required for sustaining and the social reproduction of the communities would be introduced from the social sphere to each settlement. This economic exchange was established to satisfy the needs of the communities that were not met through the direct interaction of each group with its own ecosystems. In order to achieve this, a part of the production from one community would have been separated from its own consumption and be transferred to the social sphere; and *vice versa*, a part of the consumption of a community would depend on economic exchange.

The rationality of a peasant economy would have been guided by the principle of guaranteeing the reproduction of domestic groups, avoiding the depletion of resources from the natural sphere and transformed sphere. The specialisation of natural spaces and the productive activities associated would also be avoided (Toledo 1993, 209), in a framework of full fixation and appropriation of the social space. This economic strategy, oriented to self-subsistence – not autarchy (Meillassoux 1993, 60) – does not exclude the existence of specialists, for example in the production of metal, textiles or ivory goods, given that this work did not have a negative impact on agricultural practices.

Therefore, it is essential to be able to determine the capacity of these primary producers – the peasantry – to freely generate surplus labour

and surplus product, which could be transferred to society. Or indeed, whether this capacity had been taken away from them by a dominant social group, so that the surplus produced did not revert to society in general, which would be considered social exploitation (Bate 1998; Risch 2002, 26). This difference is essential, because it will determine whether we are referring in the first case to a tribal social formation (Sarmiento 1992) or in the second case to different class societies (Bate 1984; 1998) with different ways of extracting the surplus from the peasant groups.

To maintain and consolidate the exploitation of peasant groups, there needs to be an economic dependency on the social sphere. In other words, there needs to be an increase in the consumption of basic goods, required for their production and reproduction, obtained through the social sphere. This increased dependency could be achieved by increasing and developing the material conditions necessary to participate in social life, for example better tools and new goods with a high social value and group identification value, as well as by dissuading peasant groups from engaging in continual economic exchanges. In this way, defining which raw materials and goods were obtained through the natural sphere and transformed sphere, and conversely, through the social sphere, could become a valid and under explored indicator to determine the degree of economic development and, also, dependency of a given society.

Geography of the Border Area

The study area is located to the northeast of the Baetic System mountain range (Southeast Spain), specifically the areas between the southern Prebaetic System and the Subbaetic System. This area's geography is characterised by the presence of various parallel mountain ranges aligned in a southwest/northeast direction, which define and form poorly developed valleys. Only the Vinalopó tectonic fault enables any southeast to northwest communication between the coast and the interior of the Iberian Peninsula.

It covers an area of about 3,600km², of which approximately 1,200km² – located to the south –

corresponds to the northeastern extension of El Argar occupation, whilst the rest is occupied by the Valencian Bronze Age culture. The Abanilla-Crevillente-Negra-Tabayá mountain range (the closest to the coastal areas) forms the border between the two societies (Jover/López 1997) (fig. 2).

The northeastern Argaric territory studied is delimited by several mountainous areas that enclose the Bajo Segura and Bajo Vinalopó basins. This area is defined geologically by the Orihuela, Dolores-Callosa and Elche floodplains, with more than 35 primary and derivative flint and quartzite deposits, together with two outcrops of igneous rocks and numerous different sedimentary rocks (Jover 1997; 2014). Only one copper deposit is known to have been exploited at Cerro de la Mina in the Sierra de Orihuela (Brandherm et al. 2014).

The areas of the middle and upper reaches of the Vinalopó river and the Seco river are the best-known areas. This is a natural corridor surrounded by various mountain ranges. The Vinalopó river valley is an important area of open floodplains. Here the quaternary sediments from the bottom of the valley should be noted, especially those from the Villena basin, as well as igneous rocks, many siliceous outcrops, sedimentary rocks and clays. However, no copper or silver deposits have been found (Simón 1998).

An integrated program of investigation and analysis has been developed in the study area, which has included geoarchaeological surveys and excavations. The results of these investigations have enabled us to characterise the settlement pattern and to collect important stratigraphic and chronological data. At least 16 settlements, of different sizes and locations, have been excavated, including the Argaric sites of Laderas del Castillo, Tabayá, Pic de les Moreres, Cabezo Pardo, Caramorro I and Illeta dels Banyets; and the Valencian Bronze Age sites of Cabezo Redondo, Terlinques, Barranco Tuerto, El Negret, La Horna, Foia de la Perera, Polovar, Purgaticos and Lloma Redona.

So far, more than 130 absolute dates have been obtained (Jover et al. 2019a). Well-sequenced series of dates have also been obtained from four settlements that have enabled us to propose a periodisation for the whole studied space (Jover et al. 2014).

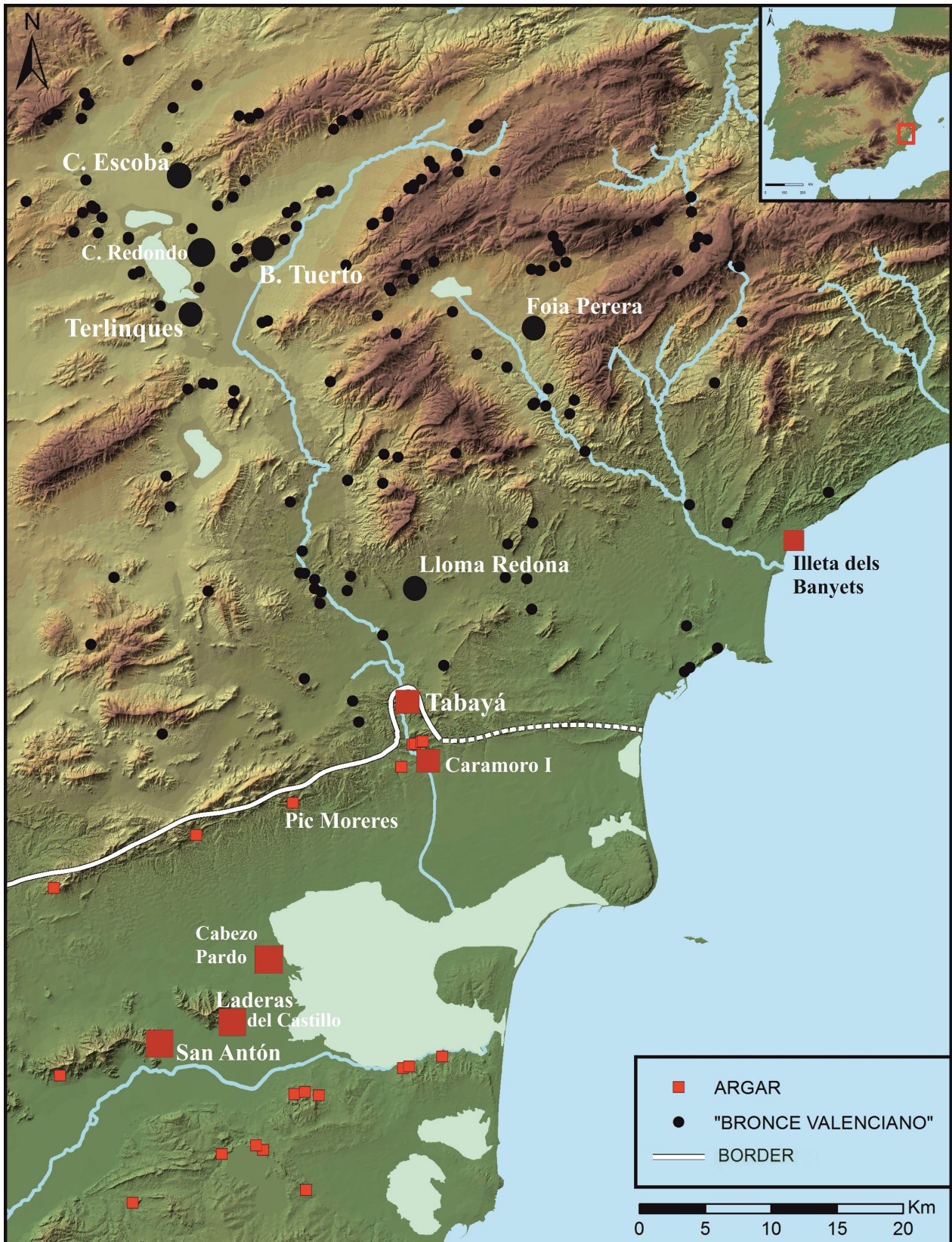


Fig. 2. Map of the two territories studied, showing the main settlements and the border proposed between them, in the province of Alicante.

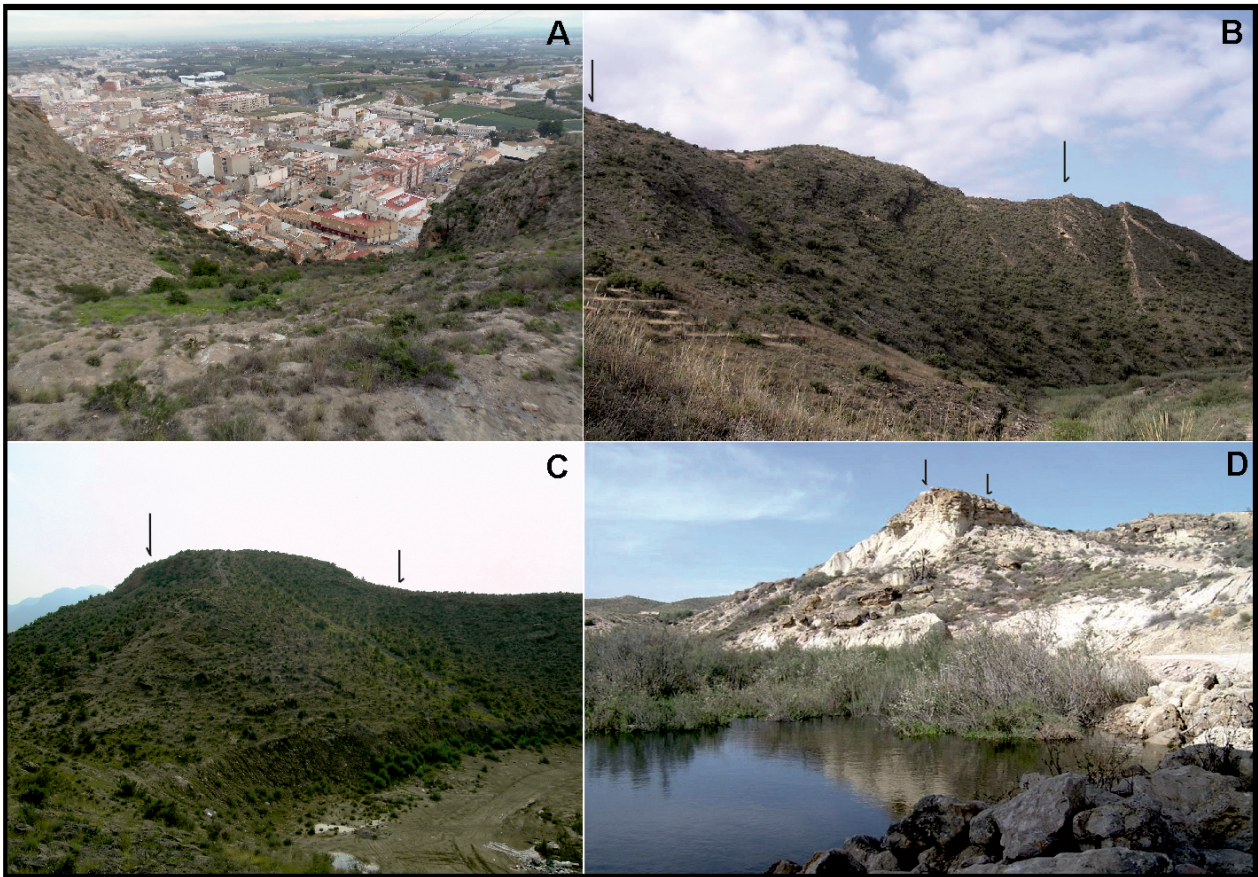


Fig. 3. View of different Argaric sites mentioned in the text: A. Laderas del Castillo; B. Tabayà; C. Cabezo Pardo; D. Caramoro I.

Evidence associated with the demography of the Argaric territories indicates that from the end of the 3rd mill. BC, the settlement pattern was characterised by many dispersed settlements in isolated hills and foothills. In total, 28 settlements have been recorded, located near to the best agricultural land and on mountain passes (*fig. 3*). Four site classifications have been established, defined by their size and material culture (Jover et al. 2019a):

- Settlements with a surface area of ca. 2ha, for example San Antón and Laderas del Castillo (López et al. 2018). These would have been nuclear sites with the longest periods of occupation, from ca. 2200 to ca. 1500 calBC and possibly until 1250 calBC.
- Settlements between 0.5 and 1ha, located on the main communication routes. Settlements, such as Tabayà (Hernández et al. 2019), were occupied for an extensive period of time, similar to the large settlements in the area.

- Settlements between 0.1 and 0.3ha, such as Cabezo Pardo (López 2014). These sites were established ca. 1950 and abandoned ca. 1550 calBC.
- Finally, there is a wide range of smaller sites, less than 0.1ha, with a short occupation period. Included in this group of sites is Caramoro I, recently re-studied and recorded by our research team, with an occupation sequence of less than 250 years, between 2000 and 1750 calBC (Jover et al. 2019b).

In respect to the Valencian Bronze Age culture, more than 150 open-air sites have been recorded, widely distributed over the study area (Jover et al. 2018). They were established mainly on the sides and tops of isolated hills, in the middle of valleys and mountain ridges (*fig. 4*). Unlike the settlements in the Argaric territory, the sites in the Valencian Bronze Age area are much smaller. They have been classified into three types:

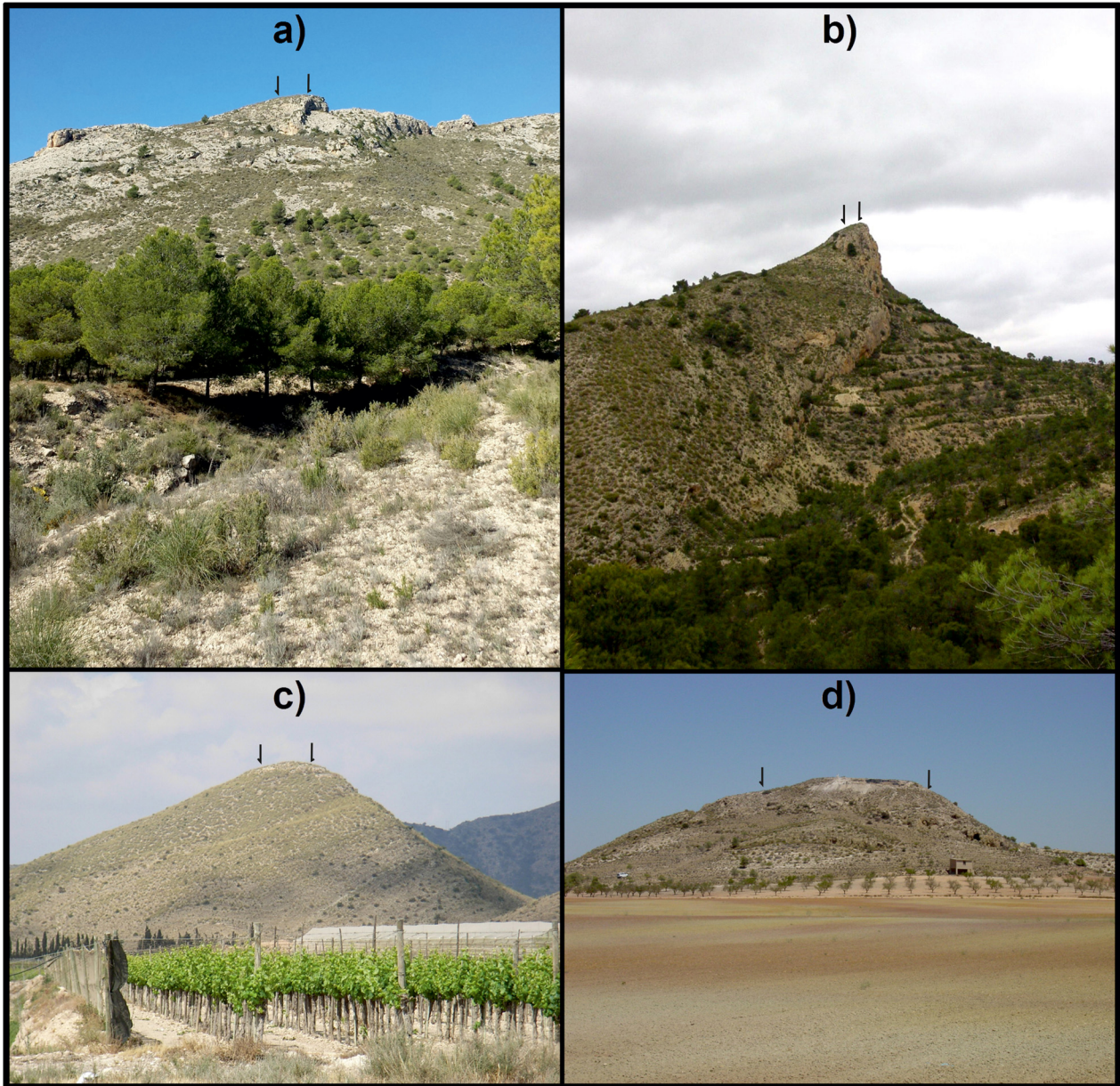


Fig. 4. Valencian Bronze Age sites with different orographic locations. On top of mountain ridges: a) Barranco Tuerto; b) Puntal del Ginebre. On top of hills: c) Lloma Redona; d) Terlinques.

- Settlements between 0.2 and 0.4ha. Seven of these types of settlements have been recorded: Cabezo Redondo, Cabezo de la Escoba, Cabezo del Rosario, la Atalaya, Cabezo de la Virgen 1 (possible site), Portitxol and El Negret. The first five are located in the Villena basin. Excavations and dating carried out on the first two sites indicate that they were occupied for a considerable period of time, between 2150 and 1500 calBC, although Cabezo Redondo (Hernández et al. 2016) reached its peak extent between 1500 and 1250 calBC. The latter three sites were also occupied until the end of the 2nd mill. calBC, however the date of their maximum extent has not been determined.
- Settlements between 0.1 and 0.2ha. These sites are more abundant and, like the larger ones above, were located between five and seven kilometres from each other. There are 14 sites, the majority of which are recorded in the Villena basin. An example of one of these sites is Terlinques (Jover/López 2016), where excavation has shown that it had a long occupation sequence, between 2150 and 1500 calBC.

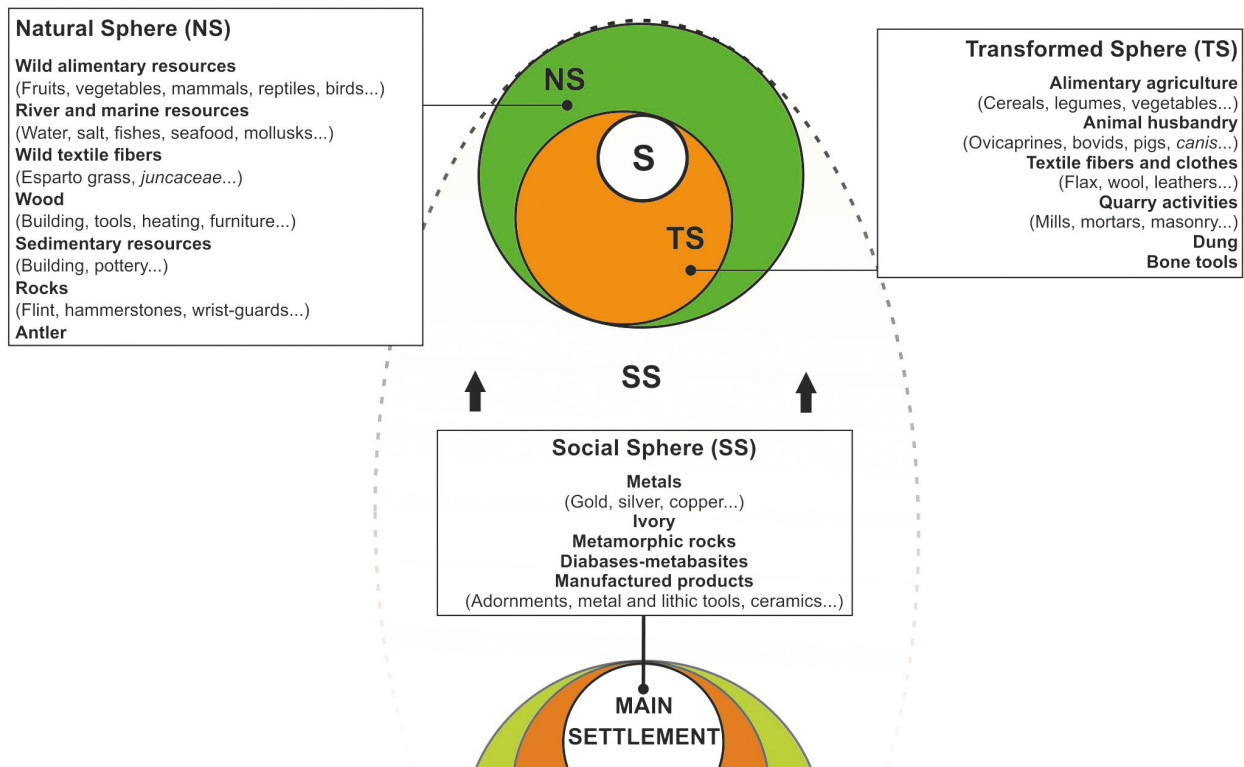


Fig. 5. Diagram showing resources, products and productive activities linked to the three different spheres in a settlement and the relationship with a main settlement.

- Settlements smaller than 0.09ha. There are 130 of these types of sites, with more than 60% of them being smaller than 300m². Some were habitation sites with short occupation sequences, such as Foia de la Perera or Loma Redona (Jover et al. 2018). Others were more like storage areas (Jover et al. 2016), shelters (Jover et al. 2017) or even observation posts to control the territory (Jover/López 2005).

The evidence appears to indicate that the settlement pattern in the southern area of the Valencian Bronze Age culture, between 2150 and 1500 calBC, was characterised by large settlements, between 0.1 to 0.4ha, occupied over a long period of time and equidistantly distributed and located between five and seven kilometres from each other. All the settlements were near agricultural land, water, and other natural resources. Surrounding these large settlements, were smaller sites with a shorter period of occupation, and other secondary sites such as storage areas and shelters (Jover et al. 2018).

There are, therefore, significant differences between the Argaric and the Valencian Bronze Age areas in the organisation of the space occupied.

The size of the settlements, their spatial distribution, and the political control over access to the Argaric space (Jover/López 1999; López 2009; Martínez Monleón 2014), are all significant aspects that differentiate the two cultural areas and suggest that there was a greater degree of social and political development of the Argaric Culture (Jover et al. 2019a).

Resources

Bringing together all the archaeological evidence from the investigated sites, all the data on the resources that are present on either side of the Argaric border have been synthesised. The types of resources that were used, their manner of procurement and the context from which they were acquired, i.e. the natural sphere, transformed sphere, or social sphere, have been identified. A detailed analysis of the material record indicates that almost all the resources come from the natural sphere or transformed sphere surrounding each settlement (fig. 5 and 6).



Fig. 6. Resources and artefacts obtained from the three different spheres of interaction. Natural sphere: a. spindle with juncaceae thread from Terlinques; b. carbonised reed fragments from Cabezo del Polovar, probably used as building material; c. cob units of a built structure from Caramoro I. Transformed sphere: d. carbonised seeds of *Hordeum vulgare* ssp. *vulgare*, *Triticum aestivum-durum*, *Vicia faba*, *Pisum sativum* (Pérez Jordà 2014); e. bone awls from Caramoro I. Social sphere: f. diabase tools from Terlinques; g. ivory bracelets from Caramoro I; h. metal artefacts from Caramoro I; i. gold ear gauge from Cabezo de la Escoba.

In regard to the management of the natural environment transformed (natural sphere and transformed sphere) by each settlement, the main cereal crops cultivated were naked wheat and covered barley (Buxó 1997; Pérez 2013). Evidence of this has been found in various sites, including Terlinques (Jover/López 2016), Cabezo Redondo (Pérez 2016), Cabezo Pardo (Pérez 2014, 304–306), Caramoro I (Alonso, pers. comm.) and Laderas

del Castillo. In Terlinques, isotope analysis suggests that the wheat was enriched with water or was irrigated (Mora et al. 2016). There is also evidence for intensive horticulture, indicated by the presence of peas (*Pisum sativum*) found in the Argaric sites of Caramoro I (Ruíz, pers. comm.) and Cabezo Pardo (Pérez 2014, 304 f.), and beans (*Vicia faba*) in the Valencian Bronze Age sites of Terlinques and Cabezo Redondo (Pérez 2016). Evidence for flax has also been found in various sites (Jover/López 2013): in grave contexts in Tabayá (Hernández et al. 2019) and in domestic spaces, such as Cabezo Redondo. Flax was probably widely cultivated.

These communities, regardless of their size, combined cultivation with raising livestock depending on their needs. A herd of mostly sheep and goats was complemented by cows and pigs. Meat, milk, skin, and bone would have been widely used, together with a range of secondary products, creating a full and integrated husbandry management strategy (Martínez Valle/Iborra 2001/2002; Rizo 2009; Benito 2014). This also resulted in the production of a large number of bone tools and adornments, such as awls, scrapers, arrowheads or chisels. Their manufacture was dependant on the morphology of the bones available.

There is also evidence for the intensive use of wild resources that were found in the environs of the settlements, through extensive hunting, fishing and gathering. Evidence for hunting deer, boar, horse and in particular rabbit, has been found (Benito 2014; Andúgar 2016). Fresh and saltwater fishing was also practiced. Amongst the wide variety of fished species, barbel should be highlighted, which has been found on sites such as Cabezo Redondo, Caramoro I and Cabezo Pardo (Roselló/Morales 2014; Soler García 1986; Marlasca 2019).

In both cultural areas other natural resources were gathered, in particular acorns, which have been found in large quantities in Terlinques (Jover/López 2016), Cabezo Redondo (Pérez 2016) and Laderas del Castillo (López et al. 2017; 2018). Other species recorded include olives, wild grapes (*Vitis*) and fruit from the madrone tree (*Arbutus unedo*), as well as many others that were used for cooking or had medicinal properties (Soler García 1986; Pérez 2013). Similarly, plant fibres were

also gathered. Esparto grass was used to produce rope, basketry and clothing, and was also used as a building material (Jover/López 2013). Biotic and abiotic resources, available near to the settlements, were often implemented as building materials (Martínez Mira et al. 2014). This includes canes, reeds (Pastor 2014) and mud, which was used as a mortar and as render for massive earth walls (Pastor et al. 2018).

Analysis to determine the provenance of lithic materials has shown that tools were manufactured from locally available stone (Jover 1997; 2009; 2014). Only diabase (dolerite) came from sources further afield, between 20 and 35km away, which suggests the existence of regional distribution networks (Jover 1997; Orozco 2000). XRD and thin-section analysis of a large number of ceramic assemblages from various sites show that almost all the pottery was produced locally on site (Seva 2002). Only in a very few sites within the Argaric territory, and always being less than 2% of the total ceramic assemblages, vessels with inclusions not found in the immediate area were recorded, but these inclusions were still found locally, usually within a few kilometres.

As well as some lithics and the pottery inclusions mentioned above, a number of resources were obtained through networks established as part of the social sphere. These include the exchange and distribution of shells, other types of stone, ivory and metals.

Bivalve shells or marine gastropods have been recorded across the sites studied, even those that are more than 100km away from the coast, such as Cerro de El Cuchillo (Barciela 2006). All these malacological resources were gathered post-mortem in coastal areas and were used to manufacture adornments (Luján 2014). Large numbers of shells were distributed widely across the territories.

Metamorphic rocks, most notably fibrolite, also circulated in both the Argaric and Valencian Bronze Age territories and were probably coming from the southeast Iberian Peninsula (Orozco 2000).

Ivory, mainly from elephant but also some from hippopotamus, was abundant, manufactured into buttons, bracelets and pendants (López 2011). Their presence is more significant in the Argaric

lands than in the Valencian Bronze Age ones. So far, only one production workshop has been identified in the coastal site of Illeta dels Banyets (López 2011).

There was more variation in the types of copper, bronze (which became more abundant from 1800 calBC [Montero et al. 2019]), gold and silver implements recorded. Settlements would have had access to basic implements such as awls, chisels, knives and arrowheads, and in some cases small axes and saws. However, large axes and halberds are only present in some Argaric sites. These objects, which may also be considered as weapons, have only been found in Tabayá, Laderas and San Antón (Simón 1998). Copper or bronze hoops, rings, and wristbands were common adornments in the Argaric culture as well as in the Valencian Bronze Age culture. This is not however the case for silver and gold adornments, which have only been found in graves in the largest Argaric settlements of San Antón, Laderas, and Tabayá, where a silver diadem was found (Simón 1998). Silver and gold rings, hoops, wristbands, beads, and spirals have been found on these sites, but are absent in smaller Argaric enclaves and in Valencian Bronze Age territories. Silver hoops, as well as other types of jewellery, which are considered as being completely Argaric in style, begin to appear from 1750 calBC in the area of the Valencian Bronze Age culture being researched. The gold ear gauge from Cabezo de la Escoba (Cabezas 2015) is a good example of this. This type of jewellery has only been found in high status graves.

The only metalliferous vein found in these areas is at Cerro de la Mina (Santomera, Murcia) and the few isotopic studies carried out up to now suggest that most of the metals came from further afield (Brandherm et al. 2014, 124 f.). Similarly, the evidence so far suggests that smelting activities would have been carried out in the larger Argaric and Valencian Bronze Age sites. That is indicated by the presence of moulds, crucibles and smelting residues in the Argaric sites of Tabayá, Laderas del Castillo and San Antón and the Valencian Bronze Age sites of Cabezo de la Escoba and Cabezo Redondo (Simón 1998). No evidence of these types of finds have been found in the smaller sites excavated.

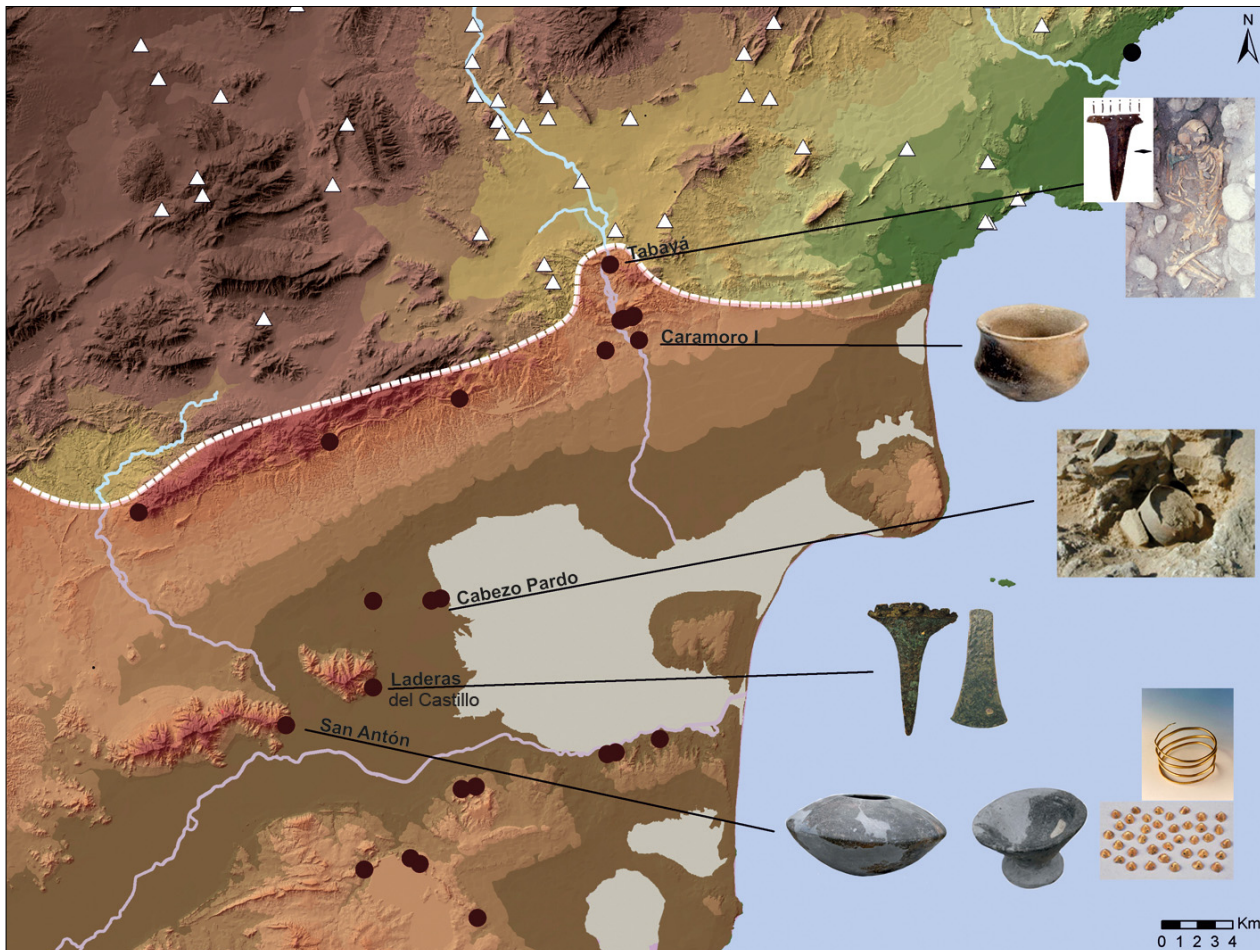


Fig. 7. Map of the Argaric area studied with indication of some of the most remarkable materials recovered in the sites mentioned, in the province of Alicante.

Conclusion

Research carried out in the border territories of the Argaric and the Valencian Bronze Age cultures shows that the settlement landscape of both societies was based on peasant communities. Even though the settlements were established near agricultural lands, the characteristics of their location in inaccessible places – on promontories, slopes and hills – allow to consider that protection of the community and its production – cultivation and raising livestock – would have been a priority for these societies. In this agricultural landscape, the local natural and transformed resources (natural sphere and transformed sphere) would have been exploited according to peasant rationality, avoiding their depletion. However, although the majority of the communities' needs would have been met by these locally available resources, each domestic group would have

required various goods that were essential for their social reproduction.

As it has been shown, the larger sized settlements, between 0.1 and 0.4ha, were uniformly and almost equidistantly distributed within the Valencian Bronze Age area. Smaller settlements, between 0.03 and 0.1ha, were established around the larger sites, and in turn farms and similar small sites were located around these. They were settled primarily near the more productive agricultural lands and sources of water, with other more logistical focused sites placed in strategic locations with good visibility to be able to control the territories (Jover et al. 2018).

In contrast, the panorama in the northeastern areas of the Argaric territory is more complex. Here a more concentrated settlement pattern has been recorded, with a smaller number of settlements that are more densely populated. Although different settlement groups can be identified

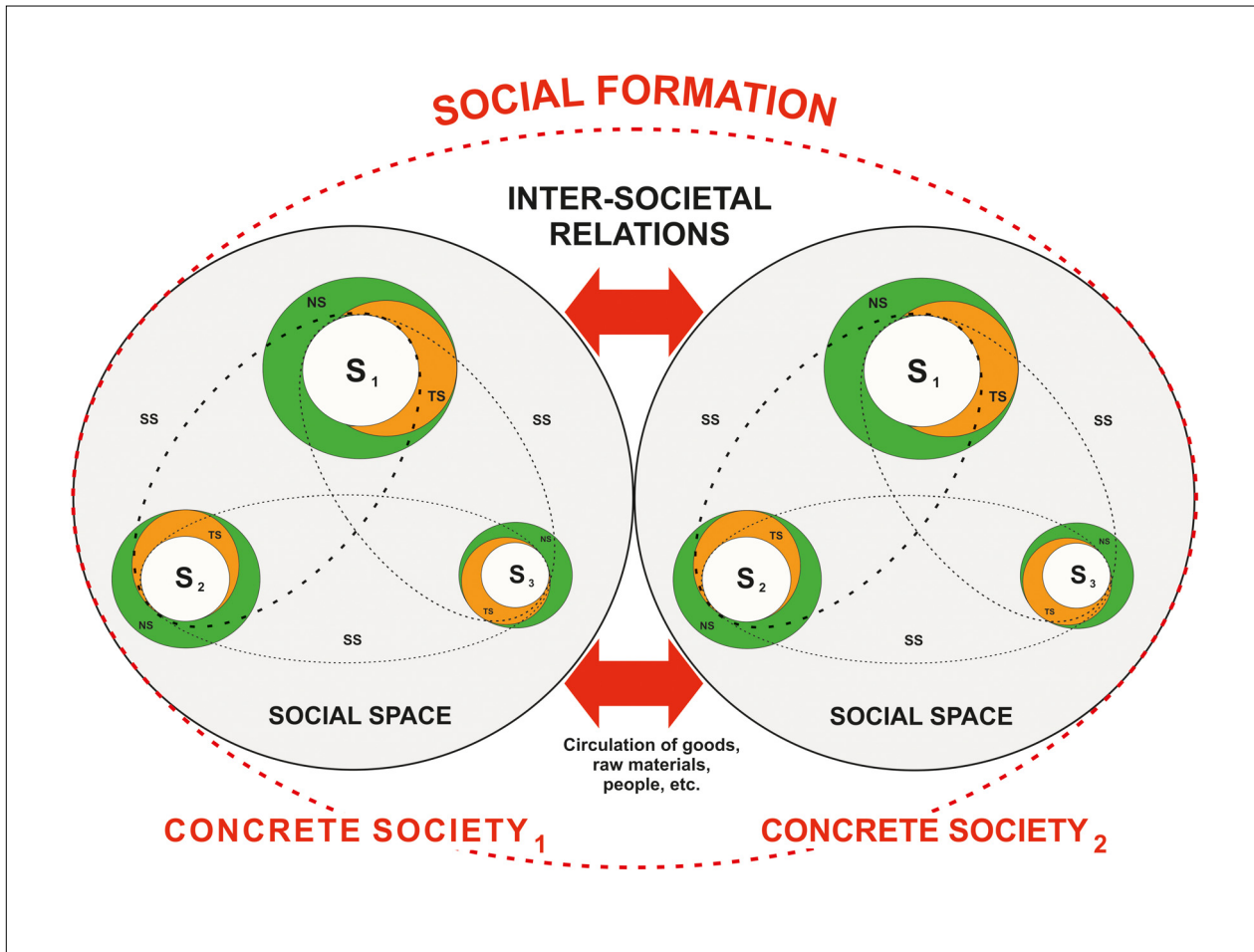


Fig. 8. Theoretical representation of the dialectical relation between two concrete societies and their social spaces.

according to size (between 0.06 and 2.5ha) the territory was organised around a few large settlements, with a larger number of smaller, variable sized sites. They were located both near to agricultural lands and at some distance from them in strategic locations, giving them control over communication routes. The newly established Argaric settlements are located close to earlier Bell Beaker period sites. This change in the settlement pattern is probably not so much due to the need to adapt to the environment, nor due to the exploitation of new or different resources, but relates to a political re-organisation linked to a new model of territorial control (Jover et al. 2019a).

The principles that formed this landscape were those of the rationality of peasant economy based on self-subsistence, environmental sustainability and the exploitation of all the available resources without depleting them or economic specialisation (Jover 1999). This is shown by the comprehensive

exploitation of all types of resources and the wide array of economic practices that have been recorded on all sites (hunting, fishing, gathering, etc.). For almost 1000 years, there were no significant changes or improvements in working tools apart from the use of copper alloys. In any case, these would have been peasant communities that tended towards self-sufficiency, obtaining all their basic needs from local resources.

However, in the Argaric society, the evidence points to an attempt by the elites to control the peasant communities, the main element of their productive system. Through generations, only a few individuals – adults and children – living in the larger main settlements, had access to gold and silver adornments. And of these, only a few men were capable of being buried (*fig. 7*) with high status weapons, such as halberds and ivory handled knives. This evidence supports the idea that the dominant social groups had taken part

of the surplus work and product of the peasant groups through various distribution processes and economic exchange.

Likewise, the dialectical relation established between the border communities of the Valencian Bronze Age and the northeastern groups of El Argar could have been driven by two fundamental aspects. The first was the need of the Valencian Bronze Age society to have access to metals and ivory, which were not available in their social space, for the elaboration of tools and adornments. The second was the capacity of the Argaric groups to control the production, distribution and exchange of these higher social value goods. The privileged position of the Argaric elites would have given them the ability to determine the exchange value of the goods to be exchanged or of those to be received. Clearly, such economic exchange would imply the appropriation of the surplus value by the Argaric elites (*fig. 8*).

In conclusion, in order to increase social differences and consolidate their position of privilege, the dominant groups, of both social spaces, although predominantly the Argaric elites, would have endeavoured to increase the dependency of the peasant groups by controlling the economic exchange of instruments of labour and goods that were necessary for production and for their social reproduction. That control would imply a more dependent relation of these groups with the social sphere, by creating and increasing their

requirements, and, in the case of El Argar, through the concentration of large populations in a few habitation sites. In our view, this is what essentially differentiates the social organisation in the Argaric and Valencian Bronze Age areas.

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