

CHAPTER EIGHT

COSMOLOGICAL BONDS AND SETTLEMENT
AGGREGATION PROCESSES DURING LATE
NEOLITHIC AND COPPER AGE
IN SOUTH PORTUGAL

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Theoretical options and their epistemological grounds are based on internal criteria, such as coherency, potentiality, performance or conceptual framework, but also on external factors usually not discursively formalized, like ethical, ideological, institutional and psychological commitments. Theory is never neutral and its diversified commitments tend to generate particular and contradictory forms of relationship with the object of analysis, sometimes incompatible in terms.

In this paper, as an alternative to traditional materialistic and functionalist approaches, I intend to outline the possibilities of cognitive approach in the interpretation of enclosure architectures and to settlement aggregation processes during the late Neolithic and Chalcolithic in Southwest Iberia. More than a focus on economic processes, social categorization or political organization, I will try to stress the importance of world vision and modes of thinking in the attempt of understanding some sites and their territorial organization. I will start, though, with the main steps of the materialist / functionalist discourse: a trip from local autarchy to “South unity” under a core/periphery dependency model.

**Settlement, scale and ideology:
a phase of “materialistic coercion”**

The approach to Copper Age settlements networks, as in any other matter, must deal with the relation between the issue and its specific scale of analysis. The need for an adjustment between problem and scale is

central to establish the coherence of explicative and interpretative models that structure our knowledge of past social patterns of settlement. Every phenomenon has its temporal and spatial dimensions. The inadequacy of the scale of analysis introduces quantitative and qualitative transformations and tends to deform the object of research. And this was a major problem in the first attempt to modeling the Copper Age settlement patterns of South Portugal.

Carlos Tavares da Silva and Joaquina Soares (1976-77) developed this first attempt during the 1970s. The approach undertaken was based on localism and on a materialistic theoretical background. The emergence of Chalcolithic societies was seen as the consequence of labor development and production intensification, framed by a Secondary Product Revolution dynamic. This social-economic development would support segmented political structures, characterized by autonomous communities that were basically equalitarian and organized at a local scale. Localism was seen as a reinforcement of social relations based on sedentary residence and in territorial contraction, generating a social, economic and politically autonomous environment, according to the model of “one site / one fortification / one territory / one community”. Autarchy and competition for strategic resources would have generated a condition of “global war”, responsible for the fortification of settlements present for the first time in the archaeological record. War would export conflict and tension to inter-community relationships and preserve the internal unit of the group on an equalitarian basis. Finally, equalitarianism and political autarchy were seen as reaction to a centralist and hierarchic process, allegedly emerging in the late Neolithic.

Faithful to a materialistic approach, the dynamics of the system based on localism was to generate a structural contradiction, blocking social and economic development, namely an incipient social hierarchy associated with copper metallurgy. This would lead to crises that would dialectically be overcome by system reorganization. Integration would then take place, and political assimilation would substitute autarchy, giving way to social and settlement hierarchy in the beginning of the Bronze Age.

Theoretical disputes aside, this model suffered from problems of scale and data. At the time, few Chalcolithic sites were known and fewer were excavated in the south of Portugal. This was a pioneering time. Discourse was built on a limited number of isolated sites, the majority scarcely excavated and quite distant from each other, extracted from their still

unknown settlement context. A more realistic density and diversity of territorial occupation was yet to be disclosed, and the situation was propitious to localism and to interpretation centered on the site regardless its context: the site was the scale of analysis and then, by a generalization process, discourse was extended to a regional scale (i.e. Southwest Iberia). A uniform pattern of Chalcolithic settlements location was established: high places, with good visual control of landscape and fine natural defense conditions.

Today, this picture is unsustainable. An incredible amount of new data, mainly resulting from emergency archaeology of the last ten years, has changed the regional image for South Portugal, stressing the inadequacy of the model. Despite the successive asseveration (Silva and Soares 1987; Silva 1990; Soares and Silva 1992; Silva, Raposo and Silva 1993), signs of resistance were available for some time, namely the specificities of large sites like Porto Torrão in Alentejo (Arnaud 1982, 1993), Pijotilla (Badajoz) in the Gadiana basin (Hurtado 1986, 1995) or Valencina de la Concepción in the lower Guadalquivir, which suggest aggregated settlement networks in the Southwest. Nevertheless, it was in the last decade that we started to have a more adequate perception of the density and diversity of territorial occupation.

Resuming the most significant data for Southwest Iberia: the discovery (and excavation) of new large ditch enclosures, in some cases also with walls, with associated necropolis in the middle Gadiana basin, such as Perdigões (16 ha) in Reguengos de Monsaraz (Lago et al. 1998; Valera et al. 2000; Valera et al. 2007) and San Blás (more than 130 ha) in Cheles (Hurtado 2003, 2004); the discovery of large enclosures of ditches in the old known site of Alcalar in Algarve and the diversity and monumentality of its peripheral necropolis (Morán and Parreira 2003); the growing dimension (over 250 ha) of Valencina de la Cocepción (Sevilla); the evidence that several of these architectures go back to Neolithic times, as revealed by one of the ditches of the enclosure detected in Porto Torrão (Valera and Filipe 2004) or in other enclosures recently detected and excavated (such as Juromenha - Calado 2002); the growing density of settlement networks; the diversity of architectures (open sites, walled enclosures, ditched enclosures), dimensions, temporalities and locations of settlements.



Figure 8-1. Map published by Silva and Soares (1976:77), locating the sites that supported their model for Southwest Iberia.

In the face of growing data provided by the last decades of archaeological work in Southwest Iberia, different settlement aggregation models have been developed based mainly on processual and materialistic approaches.

For the Spanish middle Guadiana basin (Hurtado 1995, 1999, 2003), hierarchical aggregation is thought to take place in the context of a specific territorial process. The large enclosure of Pijotilla would be the centre of a territory, occupied by solitary communities, with social relations based on cooperation and redistribution. This model envisions a hierarchic territory of communitarian basis, where the centre assumes a redistributive role and serves as religious and symbolic reference, regulating the inner social order. This solution is closer, although slightly less hierarchic, to Gilman's redistribution model, suggested in his personal revision of two decades of functionalist prehistory in Southeast Iberia (1999). Assuming that inequality is inherent to production intensification, regarded as incompatible with parental social systems (named inadequate to that mode of production demands), a large scale dependency and management is structured by what he calls a Redistributive Chiefdom.

The process origin is not particularly different from the autarchic model, nor is the theoretical background. The driving force is again production intensification associated with technological development, generating surplus and consequently demographic growth. Demographic pressure leads to fission processes, responsible for the multiplication of smaller settlements. The main difference seems to be in the result of that dynamic: a tendency for smaller independent equalitarian communities living in smaller territories and in permanent conflict for the autarchic model, and a large hierarchical aggregated territory supporting a parental and solitary social matrix for the aggregation model.

Completing an image inspired by the traditional (and nowadays questionable) model developed for Los Millares in Southeast Iberia, the several fortified settlements located in high places in the border of that territory (Tierra de Barros, Badajoz) are interpreted in the context of an integrated and coordinated strategy of territorial defense run by the centre. Here, the idea held by the autarchic model that war would export conflict to intergroup relationship, granting internal unity and cooperation, is transposed from a local to a regional scale: a large hierarchical but solitary settlement network is protecting itself from other competing territories. From competing autarchic sites we pass to competing hierarchical territories. From fortified settlement, we pass to fortified territory.

For South Portugal, several authors have discussed aggregation and hierarchy (Gonçalves and Sousa 1997; Calado 2001; Valera 2003; Morán and Parreira 2003; Valera and Filipe 2004), assuming, with different theoretical perspectives, that social dynamics are articulated at supra local regional scales. However, the amount of data and the images provided by some “mega sites”, such as Los Marroquiés Bajos (Jaen) or Valencina (Sevilla), inspired further discourse regarding aggregation, and in the last years a “reunion” of all South Iberia in a core/periphery hierarchic dependency has been attempted (Nocete 2001).

Taking into consideration the Peer Polity Interaction model (Renfrew and Cherry 1986), regarded as adequate for local/regional analysis, and the World System model (Wallerstein 1993), developed for large interregional scales, F. Nocete (2001) developed a materialistic approach to South Iberia as a whole, based on core/periphery dependency relationships. In this model, an “initial classicist society” could only be developed and reproduced through a spatial organization of social inequality, process that

implied territorial expansion to periphery and only recognizable in large scales of analysis.

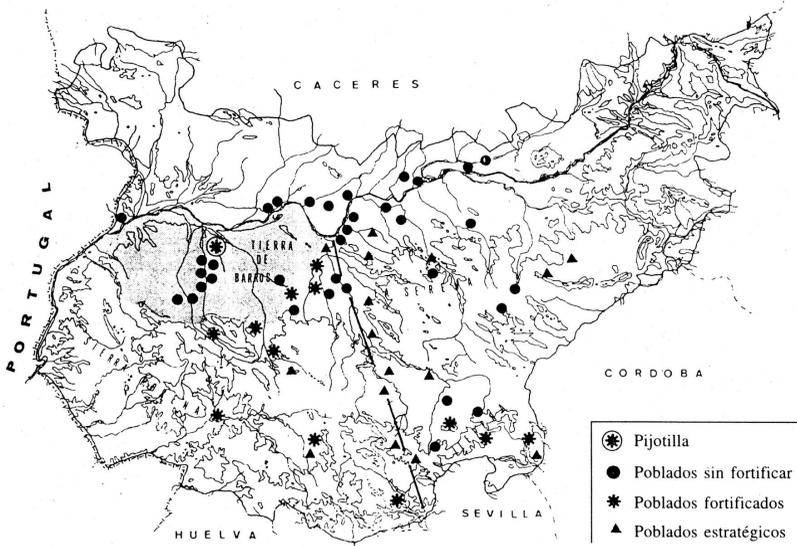


Figure 8-2. Map published by Hurtado (1995) with the settlement aggregated network of "Terra de Barros".

The Southwest is seen as an extension of influence from the core, located in Los Marroquíes Bajos, and large enclosures, like Valencina, Porto Torrão or Pijotilla, are interpreted as semi-peripheral centers, capable of controlling and centralizing critical resources, allegedly produced in specialized dependent sites such as "miner's settlements". That control and selective circulation and distribution of critical resources and products would reinforce dependency and increase inequality.

Nocete evades criticism on the applicability of World Systems to prehistoric societies¹ by arguing that the model has plural modalities and that typical mechanisms of market economies are absent in some of those modalities, especially where social inequality relationships are structured by spatial dependency scales. The process is presented in a pristine way, expanding West and East from the high Guadalquivir valley, forming peripheral rings with different dependence degrees. Once again, the motor is based on agrarian intensification and demographical growth, but a special role is reserved to labor force control, regarded as crucial to

surplus increase in low technologic development societies. Following Godelier, he assumes that labor control may be indirect, achieved through symbolic resources, for instance based on ancestors cult, on supernatural or other ways of indirect control over land and labor. This is what J. Soares (2003) called symbolic euphemistic power: a process of turning capital into symbolic capital, giving an illusion of autonomy to symbolic and religious power in controlling without coercion.



Figure 8-3. Map published by Nocete (2001) with spatial limits of hierarchic dependency in South Iberia through the 3rd millennium BC.

This solution (symbolic euphemism) is closer to the one provided by models that stress the role of persuasion and negotiation as a crucial superstructure political strategy for aggregation and emergence of inequality process (Hayden 1995; Díaz-del-Río 2004; Garrido-Pena 2006). In trans-equalitarian societies, regarded as intermediate diversified social organizations between segmentary and ranked societies, strong mechanisms of coercion are absent and power and cohesion rely on factions and in their

political games. In time, especially in periods of economic growth, the system allows power concentration and group differentiation, which increase inequality. This model has been suggested to areas where the archaeological record show settlement networks less exuberant than those of South Iberia.

In fact, these aggregation theories, based on redistributive or classicist social relations, rest, in terms of their empirical data, on size hierarchy of settlements, differences in monumental investment and architectonic achievement, differences in location strategies according resource availability and differences in the amount of certain artifact categories (prestige goods, metals, products of large circulation). The contrast is regarded as revealing rank or classicist social organization, and the bigger sites are interpreted as political and economic centers that rule large territories, supported by agrarian intensification. Monumental architecture, reflecting a large labor mobilization, is seen as unquestionable evidence and consequence of social asymmetry, and used in its social reproduction.

Almost ten years ago A. Gilman critically reviewed some of these assumptions:

“Los datos que tenemos, aunque sean desiguales e incompletos, nos permiten ver que algunos elementos claves de estos argumentos – las jerarquías de asentamiento, la especialización artesanal a tiempo completo en la metalurgia, las clases sociales hereditarias – carecen de confirmación adecuada, mientras que otros – la existencia de un cierto grado de intensificación en la agricultura –siguen en pie” (Gilman, 1999: 91)².

Gilman’s paper suggested a nuanced view of complexity levels in Chalcolithic and Bronze Age societies in South Iberia (particularly the Southeast), emphasizing the lack of evidence for strong social hierarchy supported by irreversible dependencies and controlled by consolidated and institutionalized powers. However, the main problem lies in the association between social complexity and linear social evolutionism— from simple to complex, from less to more—based on no quantitative perception of change and diversity and in inflexible projections of theoretical models developed for social realities closer to our times.

In fact, Gilman’s statement regarding the inflation of complexity (as Norman Yoffee put it) occurred in a particularly curious time in Iberian archaeological research: a moment when, almost everywhere, new data was revealing significant complexity, not only in the South, but also in the

North, where hundreds of Chalcolithic enclosures were identified along the Douro and Mondego basins (Delibes de Castro et al. 2005; Jorge 1994, 2003; Valera 2000, 2007). Furthermore, monumental architecture was expanding in space but also in time, since several enclosures were related to early Neolithic times, namely the large ditch structures recently excavated in Valência region, on the east coast of Iberia (Aubán and Kohler 2003; Kohler et al. 2008). According to recent data, the emergence of monumental investment and architectonic achievement in the Southwest, namely ditch enclosures such as the inner enclosure of Porto Torrão, the enclosure of Juromenha, and the small enclosure of Torrão, has moved back in time into the final Neolithic period. These data reveal a new diversified image of settlement networks and suggesting the need of alternative interpretative approaches to settlement diversity and aggregation processes during the late 4th and 3rd millennium in the region.

Behind coercion, persuasion or solitary cooperation: alternatives to settlement aggregation discourse

It has already been said that the last decade provided a significant improvement on available data for Southwest Iberia Neolithic and Chalcolithic settlement networks, basically³ related to the emergency archaeological work of a large project: Alqueva dam and related networks of water and energy distribution. This amount of new data was then mainly restricted to middle Guadiana basin, and this circumstance must be in our mind when looking at the actual map of site distribution (Figure 8-4).

In fact, when settlement interpretation is attempted in this area, three aspects should be considered: the quantity, the quality and the nature of data. The image produced in Figure 4 comprises almost two millennia and generates a picture depicting false coexistence of all sites, easily generating relations between sites that we do not know for sure were contemporaneous. These relations are central for settlement network interpretation. The distribution of large enclosures, all of them with associated necropolis, suggest a regular special distribution of settlement aggregated networks, occupying fertile land in important fluvial basins (Pijotilla, San Blás, Perdigões related to Guadiana river, and Porto Torrão related to Sado river), or close to estuary environment (Alcalar, Papa Uvas ou Valencina). However, when we look closely at each of these territories, difficulties became obvious: a great discrepancy in quality and quantity of data concerning problems of simultaneity, temporality, growing dynamics and functionality of all the sites. Just like sites taken individually,

settlement networks are dynamic and expand and retract during the periods we use to organize historical time. They are not the static image conveyed by cartography and probably never did correspond to that image.

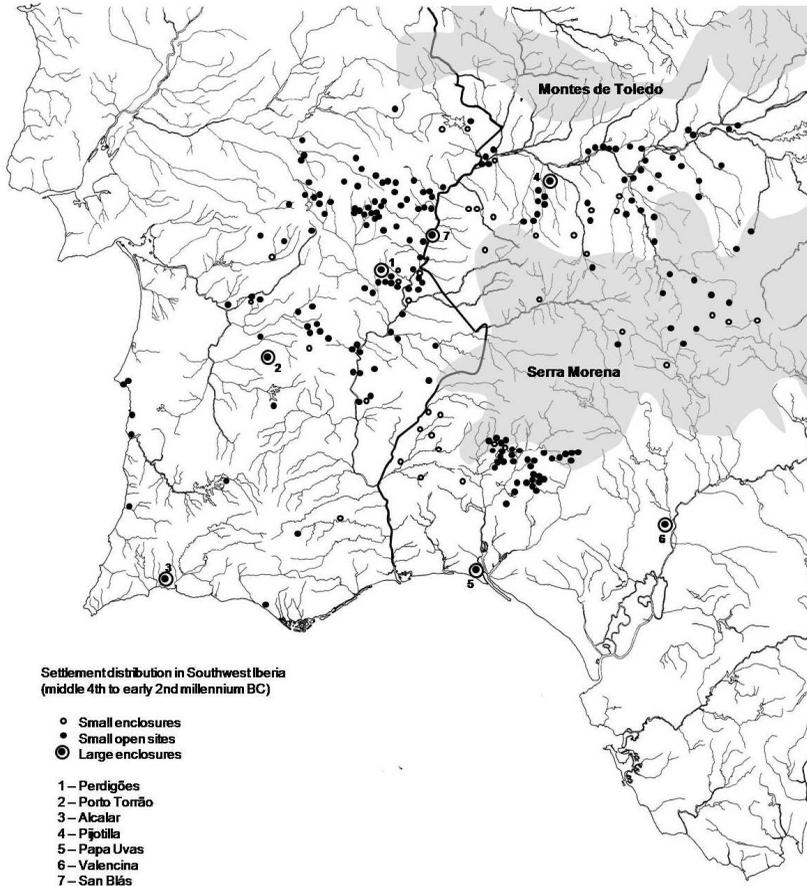


Figure 8-4. Settlement distribution in Southwest Iberia from middle 4th to early 2nd millennium BC.

Another problem has to do with developmental velocity and the nature of sites through time. What was the initial size of a large enclosure that functioned for hundreds of years? Was a smaller site once bigger than the larger ones? Why do neighboring sites present growing asymmetries? Has the actual space occupied by archaeological remains ever been

simultaneously functional? Did their functions stay the same through their living times? How did the network behave through the process of emergence and consolidation of an aggregation centre? Most of these questions, central to settlement network interpretation, simply cannot be answered.

Finally, what kind of sites were they? Should we treat them as expressions of the same social processes? Coming from theoretical perspectives closer to post-modern tendencies, strong criticism is being focused on several dichotomist assumptions in settlement interpretation, such as symbolic / functional or sacred / domestic (Jorge 1994; Márquez Romero 2003). Deterministic thought, based on mechanical and linear evolutionism, is denounced while phenomenology and hermeneutics emerge as guidelines for discourse, while identity and cognition problems join landscape issues, frequently with an apparent structuralist flavor.

Debating ditch enclosures in South Iberia, Márquez Romero (2003, 2008) stresses that the available archaeological data doesn't support their traditional interpretation as "villages", arguing that empirical data was manipulated in a compulsive way, to become adequate to a specific and conservative theoretical establishment. Simultaneously, he underlines the need for the examination of enclosures as a phenomenon of European scale that should be approached with a more open interpretative mind.

Enclosures are then assumed as built places with the social role of organizing space and performing identity administration, aggregating and reinforcing cohesion over dispersed populations across a given territory. Quoting C. Scarre, Márquez Romero believes enclosures may be quite diversified and serve in different ways, and therefore it may be more prudent to speak of an "enclosure idea" developed in different forms by each community to respond to their specific social needs. So the equation "similar material phenomenology / identical social process" is abandoned.

In fact, being a European phenomenon (see also Salisbury and Morris, Chapter 5 this volume), enclosures present significant formal diversity, probably corresponding to an equally diversified conceptualization of those architectures. In Iberia, that diversity is quite remarkable (Valera e Filipe, 2004), expressed in design, topography, dimensions, spatial complexity, foundation dates, temporality or contextual nature of occupation.

Diversity, namely in its most ephemeral versions, has been addressed by the so called “dwelling perspective” to stress the phenomenological importance of the act of building and inhabiting the buildings (Evans 1988). Enclosures would have a permanent unfinished design, always emerging as a new experience. There wouldn’t be a particular form previous to construction, but a dwelling sequence developing in a relational context with all elements of the world, and meaning would be produced in the volatility of experience (Ingold 2000). Therefore, design is not detachable from dwelling as a previous stage of building.

Though it is not particularly difficult to adhere to ontological and epistemological grounds that refuse the separation between subject / object and that emphasize the experiential component of every representation, excessive binding to existential volatility may drive us to an incomprehensible particularism. If meanings come out of experience and dwelling, it is also true that those meanings tend to be retained. If meanings are historical and two individuals can not have the same exact experience or dwelling of a given situation, the dynamics of life has rhythms that allow pre-conceptualizations to be established and shared, which guide and constrain action. Otherwise, we would be in the presence of a new form of dichotomy between structure and agency, between the social and the individual. If the act of building participates in the construction of the meaning of an architectural structure, that act is also bounded to previous meanings rooted in tradition (and generally communicated by communities) and by purposes also shared and related to that same tradition. It is not surprising, then, that Whittle recently argued that several similarities occur in enclosures in different and vast areas of Europe (such as circular tendency or concentric design), suggesting the existence of shared ideas that actively participate in architectural form and in territory and landscape organization (Whittle 2006). To a structuralist, this approach suggests that many resemblances throughout the world might express structural similarities in the solutions developed to deal with certain problems and situations of social organization that have a limited range of possibilities.

But the simple inversion of interpretation, regarding all enclosures simply as sacred and religious places, is seen as a perpetuation of the criticized dichotomy “sacred/profane” (Márquez Romero 2003). The activities that occurred inside these places would be inscribed in daily social practices of those communities. Enclosures would have an active role in landscape and territory building and in mental world structuring. It

is assumed we are in the presence of societies very different from ours, where daily life and activities are strongly impregnated with sacred meanings and that these populations organized and built their space in a local / global correspondence logic.

According to this orientation, large enclosures maintain an aggregation role, but the mechanisms of aggregation are totally different from those proposed by materialistic approaches of core/periphery dependency based on social coercion, although in certain aspects they may be compatible with redistribution models. Particular importance is conceded to identity and world vision, which underline the role of cognitive and psychological aspects as critical issues to human social and territorial organization. Archaeology has always spoken of the mind. But the development of cognitive science and psychological and anthropological structuralism after World War II renewed that interest, and if efforts have been mostly orientated to Man's evolutionary process, some research lines have demonstrate that the historical dynamics of basic mental representation categories is also very important to Recent Prehistory, helping contextualize meaning and allowing the emergence of the "differences of the past".

Recent developments, especially in Cybernetics and Information Theory, allow us to consider cognitive processes independently of a specific representation (Gardner 2002: 46) and analyze their contingency, recognizing different forms of thought through a cognitive anthropology. As Lévi-Strauss argued, an essential structure creates the frame of two rationality patterns, savage and domestic, that express themselves through specific historical "versions"; the possibilities that each pattern can assume in a certain historical context (Criado Boado 2000). Today, the general idea is that human cognitive structure has been the same throughout history, but not its contextual form of operating. If Man is basically the same (hardware), his forms of thinking and representation (software) can change and do change (Putnam 1988; Gardner 2002). Recognition is seen as a contingent process and cognitive morphologies are historical. Modular theories of cognitive evolution showed that structural transformations are not just a question of physical evolution, but that cultures have a restructuring active role in the modes of thinking, not just in contents, but also in neurological organization: "a culture can, literally, reconfigure the patters of brain use" (Donald 1999:25). This historicity of modes of thinking allows us to speculate about the mental operative frameworks that might have functioned in recent prehistory, helping to consider different

forms of recognizing and constructing meaning that enlarge our interpretative possibilities related, in the present case, to specific architecture and spatial organization.

To that purpose, the finalist model, inspired in Piaget's work, may be quite useful. It generically establishes a set of stages of centered perspectives, where a given situation becomes an absolute and is not articulated with other possibilities. A homology is established between object and perspective of the object. Particular aspects of perspective are considered as properties of the object, in the context of an absolute system of references. This general pre-operative mental structure, (or its opposite, the operative mental one), in terms of the theoretical model, correspond to an "epistemic individual" (Piaget 1973), an ideal individual that embodies the common representation mechanisms of a specific time. As usual, complexity of reality is simplified by the model, and the "epistemic individual" must not be confused with any real existence, always more complex and heterogeneous. Nevertheless, it is useful when we try to understand basic pre-operative ways of thinking and their implications in human organization in the world.

In this mode of thinking, the moments of causal sequences tend to be seen as "qualities" with essential characteristics, usually with no connections between them. Reversible thought becomes impracticable. In other words, a certain situation is not related to anterior moments in its original sequence. Reasoning is centered in the final stages of processes: the arriving point is seen as the only one possible and fatalism is established. It is not considered a possibility amongst others, submitted to reversibility principles that allow its anticipation and perception as a situation in a ground of different possibilities. Finalism is set: the situation is seen as natural and unquestionable, because there could not be another.

This interferes in a very decisive manner in mental classification processes that organize the world, inducing homologies and participation mechanisms. The participation abilities allow people's properties to be transferred into objects or participated in by them, giving way to animism and generating situations where the symbol and the symbolized are united. Examples of this include people not speaking a given name because it calls the thing, many people will not say cancer (they talk about a lingering disease), and Harry Potter should not pronounce Voldemort's name. This centered perspective also induces artificialism, giving intentionality to causal sequences and associating the ways of the world to models of

human action, thus generating mythological or religious creationism. The finalist way of thought is then a generator of animism, magic and artificialism, establishing the bases of psychomorphic causality (Baginha 1985). It reveals levels of non-differentiation between individual and object, fusing their properties either totally or partially.

This cognitive mode is also present in basic categories of representation, especially in the perception of space. Space is finite, qualitative, discontinuous and heterogeneous: the core has qualities that other areas do not have and is frequently organized in a polarized way. It tends to become a hierarchy of qualities. Certain places are seen as cores with qualities, inseparable and not transmittable, that other places do not share. In spatial analyses, the centered perspective reveals a notion that the actual place is the natural place (had to be). Space becomes finalist since intentions are given to spatial causal sequences: things are where they should be, with qualities that are natural and essential, and each situation has a purpose (finality), which is the reason for its existence. Consequently, many places are not seen as a whole composed of different parts. The parts are seen as independent entities joined together. The Bororo villages of South America provide an example: the circular organization is divided in two parts that are considered as separable “objects” with their one trait, so the idea of one village is missing.

Naturally, finalist thought is a theoretical model that does not have a plain practical correspondence. The model, like any other model, should be used carefully, with concern for particular historical conditions, and keeping in mind that discourse is a compromise between the theoretical formula and specific situations. Its categorizations, with natural graduation, could be considered adequate to approach pre-modern structures of thought and be helpful in inter subjective relations between present and past, as a contribution to diminishing the “mirror effect”. Specially, it has promising results when applied to spatial and architectonic organization, seen as a genuine expression of human way of thinking and understanding of the world.

The role of cosmologies in space organization and architectural developments of prehistoric communities has been pointed to as one of the possible shared ideas of prehistoric communities. Ethnographic data is vast and generally suggests that cosmologies are reflected in symbolic elements, art, architecture or landscapes. In other words, biography speaks of cosmographies. These cosmologic approaches have asserted the

inadequacy of dichotomies such as sacred/profane or human/natural in the interpretation of prehistoric sites, arguing that daily life, cosmos and religion constitute an inseparable unity (paradoxically, phenomenology induced holistic perspectives). Architectures and spatial organization are part of that totality, simultaneously reflecting it and acting upon it. As support evidence, many ethnographic examples are available that present houses or entire sites where construction is impregnated by cosmology.

These cosmologies are typically organized by zones, with specific properties and more or less defined, but permeable, boundaries. The importance of the notion of limiting the classification of space and the construction of its meanings has been frequently outlined (Paul-Lévi and Segaud 1983; Sack 1986; Lefebvre 1991; Barth 1999; Vignaux 2000). Being symbolic devices, representations need discontinuities in order to exist. They require frontiers. Barth particularly insists that identification is simultaneously differentiation. A qualitative hierarchy of space develops demarcation modes that establish borders. Those borders, however, are not very tight or well defined, and intermediate spaces of transition are frequent (Appadurai, quoted by Silvano 2001), which reinforce the symbolic value of special elements of connection, such as pathways or gates and doors.

Cosmological space frequently appears divided in three parts: an upper world (associated with sky, stars, mountains, aerial vision), a middle world (earth surface) and an underworld (sub-soil and its inhabitants, such as ants), usually articulated with the Sun and Moon trajectories. Sometimes there are intermediate spaces between these major cosmologic territories. In a finalist context, the cosmos organization is qualitative, heterogeneous, hierarchic and, most important, participation mechanisms take place (Valera 2007, 2008): cosmographies (i.e. Cosmos representations) participate of Cosmos properties. Symbol and symbolized are fused.

The base of cosmologic construction and the base of its physical representation are the same: the world and its dwelling. So anything may be used to express cosmologic properties and participate in them. In this context, architecture and landscape organization appear as ways of "mapping" the cosmos. The characteristics and stories associated with the universe can be read, remembered and experienced through spatial organization, since they are inscribed in it. Architecture, as spatial building, can be cosmographic; it can become a map representing cosmos. However, in finalist cognitive structures these building maps are not

simple representations. Since physical particularities chosen to express cosmological dichotomies participate of the properties of those cosmological fields, they are what they represent. For instance, a mountain does not simply represent the upper world, it is the upper world, and the same may occur with a particular part of the house or the settlement. Architecture and physical particulars of landscape (such as topography, hydrology, geology, etc.) appear as semantic resources, expressing in a polarized way the dichotomies through which the Universe might be organized (Figure 8-5).

Criticism regarding the projection of modern dichotomies into research on past societies should not minimize the structural role that dichotomist thought must have played in the prehistoric social organization. Specially, it should not lead us to take dichotomist thought for a simplistic dualism. Anthropology shows us that social and cosmological organizations structured by dichotomies are frequently expressed through dualistic systems of opposed elements. However, in his analysis of dualism, Lévi-Strauss (2003) underlines that dual symmetrical and reciprocal structures are quite rare, if existent. He distinguishes two forms of dualistic structures: the diametrical structure and the concentric structure. Divisions of elements into apparently symmetrical and reciprocal parts express the diametrical structure. On the contrary, in concentric structures, a centre/periphery hierarchy is recognized between the elements, and their relations became asymmetric and less reciprocal. An inequality is established among the opposed elements that apparently is absent from the diametrical expression. Furthermore, the reciprocal and symmetrical relationship of opposed elements tends to develop a confined diametrical structure, while concentric organization projects itself in the surroundings, prolonging the hierarchy of elements. However, in the majority of cases, diametrical symmetry is just apparent (*ibid.*). Frequently the two elements represent asymmetric dichotomies such as identity / transformation, stability / change or situation / process. In other situations, a triadic organization lies beneath the apparent dualism or diametrical and concentric dualism and triadic structures are combined simultaneously in a more complex social organization and representation.

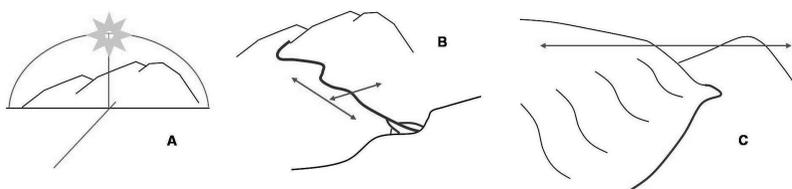


Figure 8-5. Three examples of physical resources for cosmological representations. A. Correlation between horizontal linearity of the Sun's path from East to West with the vertical linearity of sky/earth's surface/sub-soil; B. Using water streams to express cosmological dichotomies: axel established by division left bank/right bank and axel established by stream (upstream/downstream); C. Using topography to express cosmological dichotomies (e.g. plateau/valley). These different resources can be articulated in different ways.

With these theoretical notions in mind, let us then return to enclosures and settlement aggregation problems in Southwest Iberia.

Cosmological bonds and aggregation in Southwest Iberia: the case of Perdigões settlement network

I will now present an example of settlement organization and architectural solutions that may be read according to a cosmological representation framework and help us in the interpretation of some enclosures and their contextual landscapes. The case study regards Perdigões archaeological complex (Lago et al. 1998; Valera et. al. 2000, 2007). Perdigões is a large enclosure located in Alentejo region (South Portugal), in the occidental extremity of Ribeira do Álamo valley and of the local settlement network.

We do not know the exact moment of Perdigões foundation, nor the size and architecture of the site at that moment. However, nothing indicates that it is earlier than the middle fourth millennium BC, and when the large enclosure was built, the valley's occupation as a huge megalithic necropolis was already well established. Therefore, aggregation around Perdigões can be seen as process related to a specific and meaningful territory that was under construction since the Neolithic times. Its location was not incidental. On the contrary, it was result of choice and intentionality. What can we say about those intentions? The reading of landscape, its meaning, must have presided to that decision, certainly taken among other possible choices.

The site was built in a depression that looks like an amphitheatre opening to the east, to the valley where more than a hundred megalithic tombs were located. To west, south and north, visibility is restricted by the site's own topographic limits. A "spot" clearly marks the centre of the enclosure and from that point, visibility is directed to east by topography, to the Monsaraz Hill that marks the horizon in the other extremity of the valley. If we are standing in this central point of the enclosure, the sun rises behind Monsaraz Hill to make its path over the valley and to sets just in the western limits of the site. This central "spot" is surrounded by a sequence of roughly concentric ditches, which are themselves framed by two other circular and concentric ditches with a 450m diameter, with very little space between them. The circularity of the outside ditch is interrupted in the east by a semicircular structured graveyard, where megalithic collective graves (similar to tholoi) have eastern orientations. Two apertures in those circular ditches open to the valley in the East quadrant, symmetrically located in each side of the graveyard, and a cromlech is situated just a few meters below, also in the east side of the enclosure (Figure 8-6). The outside ditches enclose an area of 16 ha and their geometry, along with their necropolis association, suggests planning and a restricted moment of construction.

The site is in the eastern extremity of the valley and does not occupy a geographic centrality in the local settlement network. East orientation is crucial, not just of doors, tombs, necropolis area and megalithic cromlech, but of the location of the site itself: in the western extremity but with its back to the west and facing east, and the principal topographic elevation where the sun rises.

The spatial organization of the enclosure and the established link with local spatiality strongly suggest an astronomic relation and a connection to the ways in which these communities understood their world. Dichotomies (such as back/front, darkness/light, west/east upstream/downstream) which are usually seen as belonging to a Neolithic modeling view of the world seem to structure not just the architecture and spatial organization of the site, but also its specific location in landscape. The design of the site and the design of the territory, at least in a certain moment of their life, could express a cosmological map, and the circular and concentric spaces express a hierarchy of territories towards the centre. Remember that there are plenty of ethnographic examples where the vertical stratigraphy of Cosmos is expressed in circular concentric representations. An open and hierarchic concentric structure of space (physical, social and cosmological)

may be seen here, but diametrical organizations could also be present. The site's location in the valley and the location of the necropolis are, as we have seen, structured on dichotomies of light /darkness, world of the living / world of the dead, front / back, east / west, sunrise / sunset. As it was argued before, examples of superposed complex diametrical and concentric dualities are known in anthropological research. In America, the Winnebago and the Bororo simultaneously conceive their social and spatial structure both in diametrical and concentric ways (Lévi-Strauss 2003). The Bororo divide their circular villages in two halves of four clans each according to an east-west axis, with the territories of the dead at each extremity, and then again according to a north-south axis with a different rearrangement of the groups of four clans. In this last duality one group of clans is called "the above" and the other "the below", but when the dividing axis is physically marked by a stream they are called "the upstream" and the "downstream".

Even local geology, with a concentric lithology, (Figure 8-7) could sustain cosmologic homologies of this kind. The enclosure was built in a geologically favorable area, with weathered diorites and gabbros, but chooses a limit of that geological ground, showing the interest for the morphology of that specific point and its relation with the surrounding landscape. In a finalist cognitive context, this concentric geology would be impregnated with finalism and its configuration would have had meaning, it would respond to intentions, and the coincidence of centralities (of enclosure and favorable geology) could reinforce the cosmological reading of local landscape.

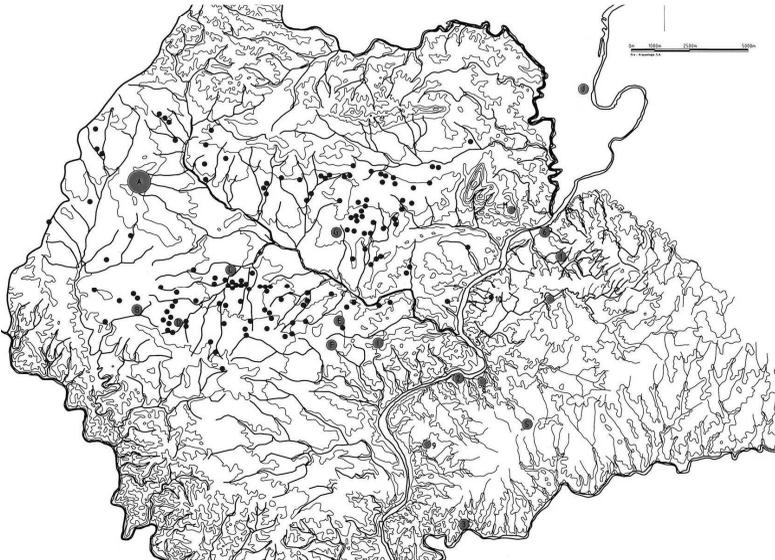
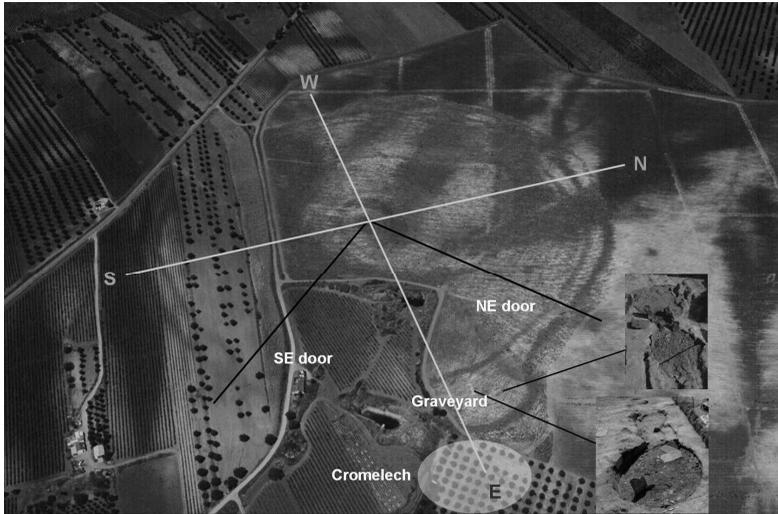


Figure 8-6. Perdigões aerial photography with indication of specific areas and orientation and in the local territory. The biggest dot is Perdigões enclosure; the small dots correspond to megalithic monuments, the others to settlements.

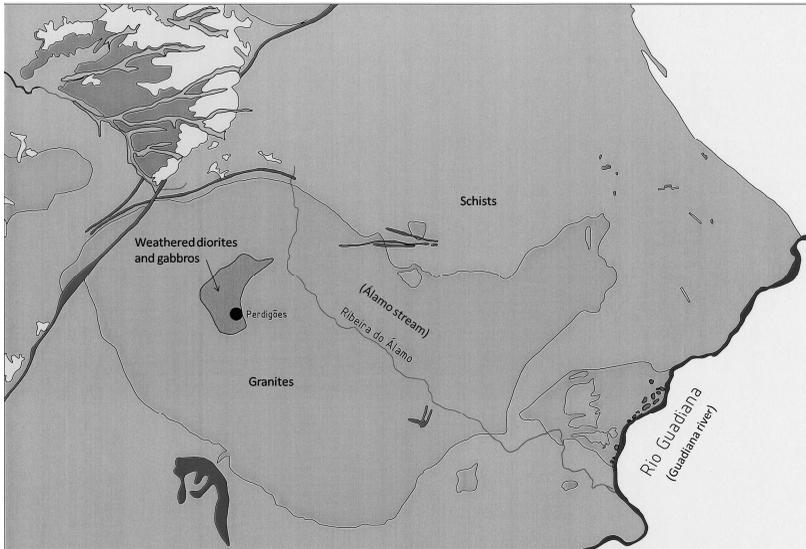


Figure 8-7. Geological context of the Perdigões area. Note the concentric tendency of geological formations and the coincident centrality of the weathered diorites and gabbros (where the ditches were easier to open).

Independently of the debate surrounding concrete functions (a place where people lived permanently, a temporary ritual meeting point, etc.), the access to this enclosure would have to be seen as a finalist movement, not simply to a surrounded space, but towards a specific place representing (in the way it was designed and lived) the local landscape, a social structure and a world vision. The two primary modes of dwelling defined by Casey (1993) are united here: the “Hestial dwelling” (name inspired in the Greek goddess of the heart, as symbolizing the core), which points to centrality, circularity and self-enclosure, and the “Hermetic dwelling” (following Hermes, the god of movement and roads) related to linearity of movements (paths) in daily life. In other words, the basic oppositions referred by Lévi-Strauss: identity / transformation, stability / change or situation / process.

So the aggregation power that Perdigões enclosure would have on local communities is basically related to the specific ways in which those communities thought and imagined their world and organized themselves and their landscape. In other words, the large enclosure would have emerged in an ongoing context of local identity generation and territorial

cognitive organization according to cosmographic worldviews, a previous process catalyzed by the site at a specific moment of the historical trajectories of those communities.

The empirical information necessary for debating these interpretative hypotheses is still scarce at Perdigões, since archaeological excavations are restricted to small areas, leaving many uncertainties about design, building dynamics, nature of occupations and their temporalities. Nevertheless, these hypotheses, which do not necessarily involve the rejection of a more functionalist approach, do enlarge the questionnaire of research and provide a richer understanding of the site.

To try to create empirical data to confront this interpretative path, several studies are being undertaken now in Perdigões, such as ceramics archaeometry, copper metallurgy, palaeodietary analysis, human/animal relationships and funerary practices.

Concerning funerary practices, two collective tombs were excavated, revealing only secondary depositions of human remains. According to an aggregation based on a strong symbolic force, this fact may suggest that communities living in the periphery of the enclosure used those tombs to deposit their relatives' remains after a primary burial elsewhere. There were some differences between the funerary pottery and the pottery collected inside the enclosure, suggesting the possibility of a specific production of pots used in funerary rituals, and the possible use of Perdigões necropolis by surrounding communities. Considering this, an archaeometric study was undertaken with ceramics and clay materials derived by weathering from schists, greywackes, diorites, gabbros, vulcanites, dolerite veins, schists with metabasites and also tertiary clays, representative of regional geological contexts, aiming to establish potential raw materials for Perdigões pottery, so one could ascertain diversity in their provenance and in ceramic productions.

The results emphasized considerable chemical heterogeneity in funerary pottery, especially of tomb 1, and the existence of a few sherds completely outliers. A multivariate statistical approach distinguishes one main group, which includes around 50% of the analyzed samples, and a second one about 30% of the samples, including ceramics of both enclosure (in majority) and funerary context. The third group (20%) is mainly constituted with funerary ceramics of tomb 1. A regional origin for most of the ceramics is probable. Quartzdiorite derived clays were

probably the most used raw material, as well as diorites and associated gabbros (related to the local geology of the site), and in some cases also tertiary clays. Nevertheless, the funerary pottery revealed a spread of resources and the third group, having exclusively funerary pots, is the only one that points to the use of weathered schists, the most distant geological source (Figure 8-7).

Considering one of the main questions, the more diversified raw materials used in pottery of funerary rituals and the exclusivity of the use of weathered schist material in funerary pots, associated with the secondary nature of ritual in the tombs, strongly suggest that Perdigões aggregated also in death, reinforcing its cosmological role in the local settlement network. Moreover, the location of the necropolis in the east side of the enclosure, between the two openings that connected to the valley, was of particular meaning and probably that meaning was not just pure representation, but also participation: participation of the properties of a specific place of the cosmographic geography of those communities.

Final remarks

A progressive sedentary condition, with territory contraction, reinforcement of borders, increasing of land investments and dependences had mental implications. Cultural contexts interfere in cognitive processing. The growing capacity of human intervention in nature stimulated the perception of space as something open to human transformation. In another way, the development of megalithic “cultural movement” generated new perceptions of time, associated to tradition and social memory (Criado Boado 2000; Bradley 2004), which imply new patterns of space rationalization and dwelling. This process would open the door to future separation between human and natural and to the redefinition of their relationships.

The control over the “natural” (even if not yet conceptualized as such) has cognitive repercussions in the way mental space categories are processed. However, if changes in the perception of space and time capacities were induced during recent prehistory, nothing allows us to think that they would escape to an essentially qualitative and hierarchic organization of a finalistic type. Therefore, I assume as promising the interpretation that some of these enclosures were places where identities were produced and reproduced, functioning as poles of social aggregation and of world organization through cosmological homologies. They guide

the “being-in-the-world” of communities and individuals that, through participation psychological processes, were in control of their cosmos by controlling its physical representation, enabling them to symbolically travel through their cosmological territories by moving in a homological organized space. Daily walking or periodic ritual walks through those “maps” would be like walking the universe hierarchy. Participation allows the control of the symbolized by controlling the symbol. Enclosure architecture (or the architecture of some enclosures) would go behind social and cosmological representation and participate in their production and reproduction. This cosmological bond would be extendable to landscapes and to the ways in which meaningful places were structured.

Today we live in a world dominated by linearity and history that does not repeat itself. We even conceive contingency as something that turns our “access” to past almost impossible. A linear way of thinking is driving us away from that past, generating world visions quite different from that mythical and animist world written in the architecture of the time.

In fact, independently of topographical particularities, which generate adaptation and specific design, the tendency to circular architecture is dominant in the third millennium BC in Southwest Iberia, as in other regions. Graves, houses, enclosures, towers, bastions, pits; all are dominated by an architecture that seems to refuse angles. Circle, being one of nature’s familiar forms, is also the shape that best represents the cyclic dynamic of live. The cyclic trajectory of ordinary activity ordered in time, the mythical thought of an original moment to return to, the cyclic worldviews, may all be expressed by this circular architecture. Nevertheless, this circularity and concentricity may also express (or be) the hierarchic geography of the cosmos, as several ethnographic studies have suggested. As a universal mechanism of communication, architecture broadcasts meaning and reproduces the social order. It is never merely functional, it represents. In a finalist cognitive mind, it may go behind representation.

Cognitive participation processes are essential here. Places, buildings and objects can participate with people, communities or world properties, assuming animistic or totemic senses. They do not just symbolically represent the communities or the cosmos, however; they participate in their qualities, helping in their symbolic control and historical reproduction. In the Lord of the Rings, the white city of Gondor is more than a representation of humans; it is their personification as a whole. The

destruction of the Bastille (as, later, Rudolf Hess's prison) was for many more than a symbolic act: a destruction of evil itself, of which properties the building participate. Participative thought is a base for homologies between part and whole, characteristic of pre-operative ways of thinking that could be assumed for recent prehistoric communities.

The finalist cognitive structure model provides a framework to approach architectures and their contextual landscapes in different historical periods and can be helpful in prehistoric research. In this theoretical context, many enclosures and landscapes of Southwest Iberia are open to other interpretative possibilities quite different from the traditional discourse, though I do not think they can be extendable to all, in a new generalization movement.

Endnotes

¹ Applicability of World System model apart, the data used in Nocete's approach, namely the chronological frame of Southwest settlements, is not correct, and actual data does not support the sequence of expansion and periphery formation he suggests for in this area.

² "The data that we have, although unequal and incomplete, allow us to perceive that some key elements of these arguments –settlement hierarchy, fulltime metallurgical handcraft specialization, hereditary social classicism – still need adequate confirmation, while others - a certain degree of agricultural intensification – still stand." (Gilman, 1999: 91) (free translation).

³ Although some research projects in the high Alentejo region also contribute to the amount of data.

Works Cited

- Arnaud, J. M. 1982. O povoado calcolítico de Ferreira do Alentejo no contexto da bacia do Sado e do Sudoeste Peninsular. *Arqueologia* 6: 48-64, Porto: GEAP.
- . 1993. O povoado calcolítico de Porto Torrão (Ferreira do Alentejo): síntese das investigações realizadas. *Vipasca* 2: 41-61, Aljustrel, C.M.A.
- Baginha, J. 1985. *Sebenta de apontamentos de Teoria da História, disciplina ministrada na Faculdade de Letras da Universidade de Lisboa no ano lectivo de 1984/85*, Manuscript in the possession of A. Valera.

- Barnabeu Aubán and O. Kohler, 2003. Mas D'is (Penàguilla, Alicante): un recinto monumental del VI milénio cal BC, paper presented to the 3rd Congresso do Neolítico Peninsular (Santander).
- Barth, F. 1999. Les groupes ethniques et leurs frontières In P. Poutignat and J. Streiff-Fenart (eds.), *Théories de l'ethnicité*, Paris: PUF.
- Bell, J. 1994. Interpretation and testability in theories about prehistoric thinking. In C. Renfrew and E. B. W. Zubrow (eds.), *The Ancient Mind: Elements of cognitive archaeology*, pp. 15-21, Cambridge: Cambridge University Press.
- Berger, P.L. and T. Luckmann, 1999. *A construção social da realidade. Um livro sobre a sociologia do conhecimento*, Lisboa: Dinalivro.
- Bradley, R. 2004. Domestication, Sedentism, Property and Time: materiality and the beginnings of agriculture in Northern Europe. In E. DeMarrais, C. Gosden and C. Renfrew (eds.), *Rethinking materiality: The engagement of mind with the material world*, pp. 107-115, Cambridge: McDonald Institute for Archaeological Research.
- Calado, M. 2001. *Da Serra d'Ossa ao Guadiana. Um estudo de pré-história regional, Trabalhos de Arqueologia*, 19, Lisboa: IPA.
- . 2002. Povoamento Pré e Proto-Histórico da margem direita do Guadiana. *Almadan*, II série, 11: 122-127.
- Casey, E. C. 1993. *Getting Back into Place: Toward a Renewed Understanding of the Place-World*, Bloomington: Indiana University Press.
- Castro López, M. 2008. El lugar de Marroquíes Bajos (Jaén, España). Localización y ordenación interna, *ERA Arqueologia* 8: 148-157.
- Criado Boado, F. 2000. Walking about Lévi-Strauss. Contributions to an Archaeology of Thought. In C. Holtorf and H. Karlsson (eds.), *Philosophy and Archaeological Practice: Perspectives for the 21st Century*, pp. 277-303, Göteborg: Bricoleur Press.
- Delibes de Castro, G., J. Del Olmos and J. Santiago, 2005. Poblamiento calcolítico y del Bronce en las Campinas del Duero Medio: un estudio de arqueología aérea. Paper presented to the reunion *Espaços na Pré-História do Centro Norte Peninsular*, Viseu.
- DeMarrais, E., C. Gosden and C. Renfrew (eds.), 2004. *Rethinking materiality: The engagement of mind with the material world*, Cambridge: McDonald Institute for Archaeological Research.
- Díaz-del Rio, P. 2004. Factionalism and collective labor in Copper Age Iberia. *Trabajos de Prehistoria* 61: 85-98.
- . 2008. El context social de las agregaciones de población durante el Calcolítico Peninsular. *ERA Arqueologia* 8: 128-137.

- Donald, M. 1999. *Origens do Pensamento Moderno*. Lisboa: Fundação Calouste Gulbenkian.
- Donley-Reid, L. 1990. A structuring structure: the Swahili house. In S. Kent (ed.), *Domestic architecture and the use of space. An interdisciplinary cross-cultural study*, New Directions in Archaeology, pp. 114-126, Cambridge: Cambridge University Press.
- Evans, C. 1988. Acts of enclosure: a consideration of concentrically-organized causewayed enclosures. In J. Barrett and I. Kinnes (eds.), *The archaeology of context in the Neolithic and Bronze Age: recent trends*, pp. 85-95. Sheffield: Sheffield University Press.
- Gadamer, G. 1984. *Verdad y método. Fundamentos de una hermenéutica filosófica*, pp. 331-377. Salamanca: Ediciones Sígueme.
- Gardner, H. 2002. *A nova ciência da mente. Uma história da revolução cognitiva*. Lisboa: Relógio D'Água.
- Garrido-Pena, R. 2006. Transegalitarian societies: an ethnoarchaeological model for the analysis of Copper Age Bell Beaker using groups in Central Iberia. In P. Díaz-del-Río and L. García Sanjuán (eds.), *Social inequality in Iberian Late Prehistory*, BAR International Series 1525, p.105-123. Oxford: Archaeopress.
- Giddens, A. 2000. *Dualidade da Estrutura. Agência e Estrutura* Oeiras: Celta.
- Gilman, A. 1999. Veinte años de prehistoria funcionalista en el sureste de España. *BSAA* LXV: 73-98.
- Gonçalves, V. S. and A. C. Sousa, 1997. A propósito do grupo megalítico de Reguengos de Monsaraz e das origens do Megalitismo no Ocidente Peninsular”, *Actas do Colóquio Internacional “O Neolítico Atlântico e as Orixe do Megalitismo”*, Santiago de Compostela, p.609-634.
- Helms, M. W. 2004. Tangible materiality and cosmological others in the development of sedentism. In E. DeMarrais, C. Gosden and C. Renfrew (eds.), *Rethinking materiality. The engagement of mind with the material world*, pp. 117-127, Cambridge: McDonald Institute for Archaeological Research.
- Hill, J. D. 1994. Prehistoric cognition and the science of archaeology. In C. Renfrew and E. B. W. Zubrow (eds.), *The Ancient Mind: Elements of cognitive archaeology*, New Directions in Archaeology, pp. 83-92, Cambridge: Cambridge University Press.
- . 2000. Can we recognise a different European past? A contrastive archaeology of Later Prehistoric Settlements in Southern England. In J. Thomas (ed.), *Interpretive archaeology: a reader*, pp. 431-444, London: Leicester University Press.
- Hodder, I. 1990. *The domestication of Europe*. Oxford: Blackwell.

- Hurtado, V. 1986. El Calcolítico en la cuenca media del Guadiana y la Necrópole de La Pijotilla. *Revista de Arqueologia* 14: 83-103.
- . 1995. Interpretación sobre la dinámica cultural en la cuenca media del Guadiana (IV-II milenios A.N.E.). *Extremadura Arqueológica* V: 53-80.
- . 1999. Los inicios de la complejización social y el campaniforme en Extremadura. *SPAL* 8: 47-83.
- . 2003. Fosos y fortificaciones entre el Guadiana y el Guadalquivir en el III milenio AC: evidencias del registro arqueológico. *Recintos murados da Pré-história Recente*, pp. 141-268. Porto-Coimbra: FLUP / CEAUCP.
- . 2004. El asentamiento fortificado de San Blas (Cheles, Badajoz). III milenio AC. *Trabajos de Prehistoria* 61: 141-155.
- . 2008. Los recintos con fosos de la Cuenca Media del Guadiana. *ERA Arqueologia* 8: 182-197.
- Hayden, B. 1995. Pathways to Power. Principles for Creating Socioeconomic Inequalities. In T. D. Price and G. M. Feinman (eds.), *Foundations of Social Inequality*, pp. 15-86. New York: Plenum Press.
- Ingold, T. 2000. *The Perception of the Environment. Essays on Livelihood, Dwelling and Skill*, London: Routledge.
- Jorge, S. O. 1994. Colónias, fortificações, lugares monumentalizados. Trajectória das concepções sobre um tema do calcolítico peninsular. *Revista da Faculdade de Letras*, II série, Vol. XI: 447-546.
- . (Coordenadora), 2003. *Recintos murados da Pré-História Recente*, Porto-Coimbra: FLUP / CEAUCP.
- . 2005. *Vitrinas muito iluminadas*. Porto: Campo das Letras.
- Jorge, V. (ed.), 2006. *Approaching Prehistoric and Protohistoric architectures of Europe from a dwelling perspective*. Porto: ADECAP.
- Kent, S. (ed.), 1990c. *Domestic architecture and the use of space. An interdisciplinary cross-cultural study*, New Directions in Archaeology. Cambridge: Cambridge University Press.
- Köhler, T. O., J. B. Aubán, L. M. Balaguer and A. D Castillo, 2008. Los recintos Neolíticos como expresión de poder en el Mediterráneo Peninsular. *ERA Arqueologia* 8: 172-181.
- Lago, M., C. Duarte, A. Valera, J. Albergaria, F. Almeida and A. Carvalho, 1998. O Povoado dos Perdigos (Reguengos de Monsaraz): dados preliminares dos trabalhos arqueológicos realizados em 1997. *Revista Portuguesa de Arqueologia* 1: 45-152.
- Ledrut, R. 1990. L'homme et l'espace. *Encyclopédie de la Pléiade / Histoire des Moeurs*, vol. 1, pp. 59-114. Paris: Gallimard.

- Lewis-Williams, D. and D. Pearce, 2005. *Inside the Neolithic mind*. London: Thames & Hudson.
- Lefebvre, H. 1991. *The production of Space*. Oxford: Blackwell.
- Lévi-Strauss, C. 2003. As organizações dualistas existem? *Antropologia Estrutural* 7: 155-189.
- Malafouris, L. 2004. The cognitive basis of material engagement: where brain, body and culture conflate. In E. DeMarrais, C. Gosden and C. Renfrew (eds.), *Rethinking materiality: The engagement of mind with the material world*, pp. 53-62, Cambridge: McDonald Institute for Archaeological Research.
- Marques, J. and D. Paéz, 2000. Processos cognitivos e estereótipos sociais. In J. Vale and M. Benedita Monteiro (eds.), *Psicologia Social* 4th edition, pp. 333-386, Lisboa: Fundação Calouste Gulbenkian.
- Márquez Romero, J. E. 2003. Recintos prehistóricos atrincherados (RPA) en Andalucía (España): una propuesta interpretativa. In S. O.Jorge (ed.), *Recintos murados da Pré-História Recente*, pp. 269-285, Porto-Coimbra: FLUP / CEAUCP.
- . 2006. Neolithic and Copper Age ditched enclosures and social inequality in the south of the Iberian Peninsula (IV-III millennia cal BC). In P. Díaz-del-Río and L. Garcia Sanjuán (eds.), *Social inequality in Iberian Late Prehistory*, BAR International Series 1525, pp. 217-234. Oxford: Archaeopres.
- Márquez Romero, J. E. and V. Jiménez Jaimez, 2008. Claves para el estudio de los Recintos de Fossos del sur de la Península Ibérica. *ERA Arqueologia* 8: 158-171.
- Mithen, S. 2001. Archaeological theory and theories of Cognitive Evolution. In I. Hodder (ed.), *Archaeological Theory Today*, pp. 98-121. Cambridge: Polity Press.
- Morán, M. E. 2008. Organização espacial do Povoado Calcolítico de Alcalar (Algarve, Portugal). *ERA Arqueologia* 8: 138-147.
- Morán, M. E. and R. Parreira, 2003. O povoado calcolítico de Alcalar (Portimão) na paisagem cultural do Alvor no III milénio antes da nossa era. *Recintos murados da Pré-História Recente*, pp. 307-327. Porto-Coimbra: FLUP / CEAUCP.
- Nocete, F. 2001. *Tercer milenio antes de nuestra era. Relaciones y contradicciones centro/periferia en el Valle del Guadalquivir*. Barcelona: Ediciones Bellaterra
- Paul-Lévy, F. and M. Segaud, 1983. *L'Anthropologie de l'Espace*, Paris : Centre George Pompidou.
- Parker-Pearson, M. and C. Richards, 1994a. *Architecture and Order: Approaches to Social Space*, London: Routledge.

- Piaget, J. 1973. *A Psicologia*, 2nd edition, Lisboa: Livraria Bertrand.
- Putnam, H. 1988. *Representation and Reality*, Cambridge, MA: MIT Press.
- Renfrew, C. 1994. Towards a cognitive archaeology. In C. Renfrew and E. B. W. Zubrow (eds.), *The Ancient Mind: Elements of cognitive archaeology*, New Directions in Archaeology, pp. 3-12. Cambridge: Cambridge University Press.
- Renfrew, C. and J. F. Cherry (eds.), 1986. *Peer Polity Interaction and Socio-political Change*, Cambridge: Cambridge University Press.
- Sack, R. D. 1986. *Human territoriality*, Cambridge: Cambridge University Press.
- Scarre, C. 2001. Enclosures and related structures in Brittany and western France. In T. Darvill and J. Thomas (eds.), *Neolithic enclosures in Atlantic Northwest Europe*, pp. 24-42, Oxford: Oxbow Books.
- Seamon, D. 1994. The Life of the Place: A Phenomenological Commentary On Bill Hillier's Theory of Space Syntax. *Nordisk Arkitekturforskning [Nordic Journal of Architectural Research]* 7: 35-48.
- Silva, C. T. 1990. Influências orientalizantes no Calcolítico do Centro e Sul de Portugal. Notas para um debate. *Estudos Orientais I, Presenças orientalizantes em Portugal, Da Pré-História ao período romano*, pp.45-52, Lisboa: Instituto Oriental.
- Silva, A. C. F., L. Raposo and C. T. Silva, 1993. *Pré-História de Portugal*, Lisboa: Universidade Aberta.
- Silva, C. T. and J. Soares, 1976-77. Contribuição para o conhecimento dos povoados calcolíticos do Baixo Alentejo e Algarve. *Setúbal Arqueológica II-III*: 179-272.
- Silvano, F. 2001. *Antropologia do Espaço. Uma introdução*, 2nd edition, Oeiras: Celta Editora.
- Soares, J. and C. T. Silva, 1992. Para o conhecimento dos povoados do megalitismo de Reguengos. *Setúbal Arqueológica IX-X*: 37-88.
- . 2003. *Os hipogeus pré-históricos da Quinta do Anjo (Palmela) e as economias do simbólico*, Setúbal: MAEDS.
- Thomas, J. 1996. *Time, Culture and Identity. An interpretive archaeology*, London: Routledge.
- Thomas, J. 2004. *Archaeology and modernity*, London: Routledge.
- Vala, J. and M. Monteiro Benedicta (eds.), 2000. *Psicologia Social*, 4th edition, Lisboa: Fundação Calouste Gulbenkian.
- Valera, A. C. 2000. O fenómeno campaniforme no interior centro de Portugal: o contexto da Fraga da Pena. *Pré-História Recente na Península Ibérica (Actas do 3º Congresso de Arqueologia Peninsular - 1999)*, pp. 269-290, Porto: ADECAP.

- . 2003. A propósito de recintos murados do 4º e 3º milénios AC: dinâmica e fixação do discurso arqueológico. In S. O.Jorge (ed.), *Recintos murados da Pré-História Recente*, pp. 149-168, Porto-Coimbra: DCTP/ CEAUCP.
- . 2007. *Dinâmicas locais de identidade: estruturação de um espaço de tradição no 3º milénio AC (Fornos de Algodres, Guarda)*, Braga: CMFA/TA.
- . 2008. Mapeando o Cosmos. Uma abordagem cognitiva aos recintos da Pré-História Recente. *ERA Arqueologia* 8: 112-127.
- Valera, A. C. and I. Filipe, 2004. O povoado do Porto Torrão (Ferreira do Alentejo): novos dados e novas problemáticas no contexto da calcolitização do Sudoeste peninsular. *Era Arqueologia* 6: 28-61.
- Valera, A.C., M. Lago, C. Duarte and L. S. Evangelista, 2000. Ambientes funerários no complexo arqueológico dos Perdigões: uma análise preliminar no contexto das práticas funerárias calcólicas no Alentejo. *ERA Aqueologia* 2: 84-105.
- Valera, A. C., M. Lago, C. Duarte, M. I. Dias and M. I. Prudêncio, 2007. Investigação no complexo arqueológico dos Perdigões: ponto da situação de dados e problemas. *Actas do 4º Congresso de Arqueologia Peninsular*, Faro, 2004.
- Vignaux, G. 2000. *O Demónio da Classificação*, Lisboa: Instituto Piaget.
- Wallerstein, I. 1993. World System versus World-Systems. A critique. In A. G.Frank and B. K.Gills (eds.), *The World System: Five Hundred Years or Five Thousand?*, pp. 292-296, London: Routledge.
- Whittle, A. 2006. The temporality of enclosure. In V.O. Jorge (ed.), *Approaching Prehistoric and Protohistoric architectures of Europe from a dwelling perspective*, pp. 15-24, Porto: ADECAP.
- Zafra de la Torre, N., F.Hornos Mata and M. Castro López, 1999. Una macro-aldea en el origin del modo de vida campesino: Marroquíes Bajos (Jaén) c. 2500-2000 acl. ANE. *Trabajos de Prehistoria* 56: 77-102.
- Zubrow, E. B. W. 1994. Knowledge representation and archaeology: a cognitive example using GIS. In C. Renfrew and E. B. W. Zubrow (eds.), *The Ancient Mind: Elements of cognitive archaeology, New Directions in Archaeology*, pp. 107-118, Cambridge: Cambridge University Press.