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Social complexity in a long term perspective

Session B15

Edited by

Joaquina Soares

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Technique and social complexity: development trajectories of peasant societies with metallurgy during the Bronze Age of western Iberia

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Elsa luís**

Abstract

Technological change has been usually correlated with complexity change. Namely metallurgical practice from the ancient peasant societies was for a long time perceived as an "engine" of social development. Such a perception revealed itself not only inaccurate but it must also be seen as largely varying according to geographical place and civilization characteristics.

Nevertheless, in ancient peasant societies technological development remains one of the most promising indicators of the growing of social complexity even if it is by no means the only possible one and such growth must always be analysed accordingly to regional constraints.

In what concerns the Iberian Peninsula, and particularly its western facade, first metallurgies seem to appear as a consequence of socioeconomic developments leading to first social elites coming into being. The metallurgical products can then be seen to fulfil the need to express social status, lacking real technomic significance. Development of metallurgical technologies and products will, nevertheless, accompany and interact with parallel developments in social complexity from the Chalcolithic to the Early Iron Age when, for the first time, metals seem to assume a full technomic role.

Palavras-Chave

Social complexity; sociotechnical transformation; archaeometallurgy; Bronze Age; western Iberia.

Résumé

Le changement technologique a été généralement considéré en corrélation avec le changement de la complexité. Notamment la pratique métallurgique des anciennes sociétés paysannes a été perçue depuis longtemps comme un «moteur» pour le développement social. Une telle perception se révèle non seulement inexact, mais elle doit aussi être considérée comme largement varier en fonction des caractéristiques de la civilisation, lieu et géographie.

Néanmoins, dans les anciennes sociétés paysannes le développement technologique reste un des indicateurs les plus prometteurs de la complexité culturelle et sociale, même s'il n'est pas le seul et si une telle croissance doit toujours être analysée en conséquence des contraintes régionales.

En ce qui concerne la Péninsule Ibérique, et en particulier sa façade ouest, les premières métallurgies semblent apparaître comme conséquence de l'évolution socio-économique qui donne naissance aux premières élites sociales.

L'apparition des premiers produits métallurgiques peut alors être perçue comme faisant face au besoin d'exprimer des statuts sociaux, manquant de réelle signification technomique. Néanmoins, le développement des technologies et des produits métallurgiques accompagne et interagit avec les développements parallèles dans la complexité sociale depuis le Chalcolithique jusqu'au Premier Âge du Fer quand, pour la première fois en Ibérie, les métaux semblent jouer un plein rôle technomique.

Mots-clés

Complexité sociale; transformation sociotechnique; archéométallurgie; Âge du Bronze; Ibérie occidentale.

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The complexity of complex...

To begin with the first obvious question: What is complexity?

We think that complexity is usually seen as a safety pin of reasoning related to things perceived to be complex. So the key concept here is *complex* which we understand to be "any structure or system with multiple interconnected parts which function as independent variables". In this sense, human societies can always be seen as complex, the difference lying in a question of degree where the number and internal arrangement of its parts provides the way to assess and compare them.

In *historical/archaeological explanation*, the concept of complexity is generally applied to all periods in a comparative and evolutionary way.

Assuming the operationality of the complexity concept for archaeological thinking, *technology* usually constitutes the most immediate means to assess complexity presence/change in social systems. Growth in technology is usually considered as a growth in complexity since the three ages system comes into being. However, it is by no means the only possibility. Speaking only of archaeographic data, analyses of habitats intra-site organization and funerary practices (for example) constitute other important sources of evidence for complexity transformations in social behaviour, a potential that is shared by other artefact analysis outside the realm of technology.

Following what A. Valera has been calling the "empirical revolution" (Valera, 2009) of the last two decades, and assuming a non-linear evolutionary tendency in the Prehistory of Iberian peasant societies (Neolithic to LBA[1]), the Chalcolithic constitutes a clear peak of complexity, either due to their dimensions and different organizational levels of the regional settlement systems, the diversification of funerary/ritual practices within them or the origins of metallurgy.

This peak of complexity is followed by a general collapse (differently dated between 2400--2200 BC in the different regional areas). Regional peculiarities notwithstanding, we can generalise and say that mainly three discontinuities in the field data materialise these changes[2]: (1) the decline, abandonment and/or restructuration of settlement systems; (2) the individualization of funerary practices; and (3), linked to the above mentioned two items, the emergence of a new symbolic system is revealed by the fading of feminine iconographic representation, the development of an andriarcal iconography, and the role of metal weapons and jewellery as social markers of prestige and power (Senna-Martinez, 2007, p.120).

Does western Iberia Early Bronze Age represent an immediate leap in complexity comparatively to the Chalcolithic?

In a simplistic evolutionary perspective it is a common assumption to think that the Bronze Age represents an immediate leap in complexity in relation to the Chalcolithic. This is something we do not believe to be true, namely for western Iberia.

That surely doesn't happen in the settlement systems that happen to be archaeographically simpler and less visible (Jorge, 1996/1997).

All the diverse and complicated funerary and ritual collective arrangements (megalithism and so on – Senna-Martinez, 2014) linked to the agricultural cycle as a metaphor for the perception of life and death collapse at the end of the Chalcolithic and are replaced by an individual treatment of the dead

1 - We consider the Bronze Age of Western Iberia to consist of a sequence of 3 periods: Early Bronze Age (EBA – c. 2250-1750 BC); Middle Bronze Age (MBA – c. 1750-1250 BC); Late Bronze Age (LBA – c. 1250-750/450 BC).

2 - One of us (SM) first proposed this understanding of the transition Chalcolithic/Early Bronze Age in Iberia at an unpublished conference in 2004 (*Turres Veteras* VII), then developed it in the classroom the following years until it was finally published in 2007 (Senna-Martinez, 2007, p. 120).

that concentrate some wealth and status display in very few masculine individuals.

Finally, the elaborate female representations linked to Chalcolithic ritual disappear and a new and very restricted status iconography appears which is based on the male gender and on metallic weapons and jewellery.

In short, the higher communitarian investment in ritual and social regulation is in its maximum complexity in Middle Chalcolithic western Iberia settlement systems[3]. It collapses in the Late Chalcolithic and is replaced by simpler, individualized systems.

We could even wonder if what is in question in the beginning of the Bronze Age is not, ultimately, the replacement of systems requiring a great collective effort in the construction and maintenance of various architectural types used for burial and ritual by more economic ones. In the new EBA systems the larger collective investment of the Chalcolithic is replaced by a smaller one, now individualized and related to the first masculine power figures.

Nevertheless, we think some indicators exist that complexity will increase during the Bronze Age, and some will begin early.

Technological aspects as a means to assess eventual complexity changes during the three periods of the Bronze Age in western Iberia.

Taking into account the previous reflexions, let us focus on some technological aspects as a means to assess eventual complexity changes during the three periods of the Bronze Age in Western Iberia:

1. Pottery as an indicator of social complexity growth?

The use of fine wares of restricted use (e.g. "copos canelados" and "bell-beakers") can already be detected during the Chalcolithic in some areas within western Iberia. It suggests that some individuals within the local communities were becoming less equal than others, perhaps within the above referred development of contradictions opposing the neolithic matrilineages to the first expressions of andriarcal power.

Finer wares, preferentially dedicated to funerary use, are the rule during Early and Middle Bronze Ages in contrast to what happens previously during the Late Neolithic and most of the Chalcolithic, when all domestic ceramic types found their way into funerary use (Senna-Martinez, 2009, p. 468).

In the EBA, "2nd generation" beakers can be preferentially used in some regional areas, while different and new pottery types[4] predominate in others.

In North-western Iberia and Beira Alta (we simply don't have enough information for other areas) we can document new technical improvements in general use vessels during the Early and Middle Bronze Ages (Luís, 2013, 2010; Senna-Martinez, 1984, 1993a, 1993b). Namely, better clay and temper preparation, flat bottoms generalization, roll handles, and composite profiles appear.

In the LBA a clear split in pottery production between finer table wares and heavy-duty kitchen and storage ones generalizes (Senna-Martinez, 1993b). Meanwhile, fewer finer pottery productions in some areas hint at a possible incipient specialization within a system of generalized domestic production (Reprezas, 2010).

So pottery production definitely shows some indication of growth in technology during western Iberia Bronze Age.

2. Do metals make the world go round?

The first independent use of copper in Ibe-

3 - Perhaps as a way to cope with the growing contradictions opposing the Neolithic matrilineages to the first expressions of andriarcal power (Gilman, 1987).

4 - As, for exemple, in the case of the so called Siret's type 6 (Castro Martínez, *et alii.*, 1993-94, p. 102), the tronco-conic vessels of central and northern Portugal areas (Senna-Martinez, 1993 e 2000: 107) and the "*rippenvase*" or "*zonenvase*" from the Southwest (Schubart, 1975, p. 46-49).

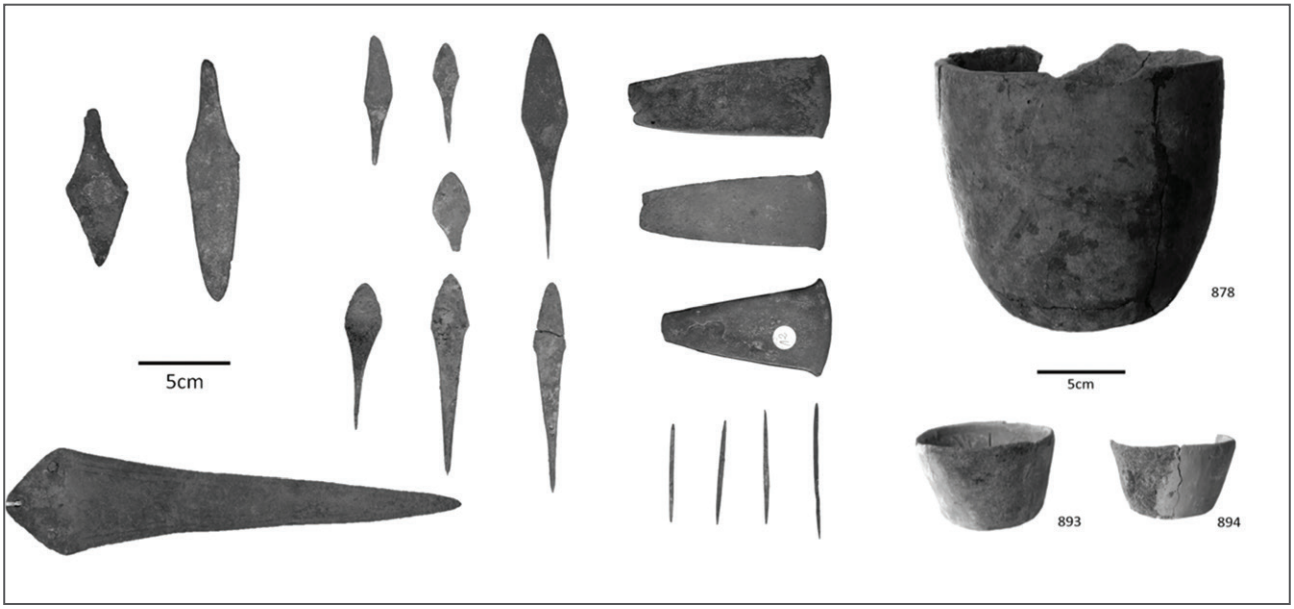

Fig. 1 – Left: Tongue-daggers, Palmela points, axes, Halberd and awls of arsenic copper. Right: Three Tronco-conic pottery vessels. The large set of metallic artefacts and some of the pottery vessels from the EBA individual burial from Gruta das Redondas in central Portugal.

ria emerges in the southeast a little before 3000 BC (Montero Ruíz, 1994; Rovira Llorens e Gómez Ramos, 2003; Roberts, 2009). From there: (1) in the Atlantic facade of Iberia, copper metallurgy will extend westwards, reaching the southwest during the first quarter of the third millennium BC (Soares e Cabral, 1993; Valera, in press); (2) in central Portugal (Estremadura) the first copper artefacts will be produced within the second quarter of the third millennium BC (*Idem*); (3) the interior of central Portugal – the Portuguese Beiras – as well as the northwest of Iberia – Minho, Trás-os-Montes and Galicia – will see the first copper artefacts well within the second half of the third millennium BC. But these will only have some regional significance with the first evidences of a regional copper metallurgy in the last quarter of the millennium and with the beginning of the EBA (Senna-Martinez, 1994a e 2002; Valera, 2007).

Since Gordon Childe (1930) metallurgical practice by the ancient peasant societies was for a long time perceived as an "engine" for social development. Such perception revealed itself not only inaccurate but it must also be seen as largely varying according to geographical place and cultural characteristics (Senna-Martinez, 2013a).

In the Iberian Peninsula and particularly in its western facade first metallurgies seem to appear as a consequence of socio-economic developments leading to first social elites coming into being.

During its Chalcolithic beginnings (an "experimenting and incipient phase") copper artefacts seem to replicate earlier stone ones (axes, knife blades, awls, etc. – Senna-Martinez, 2013a). But soon a new package appears (with the beginning of the EBA), mainly of funerary use, mixing the first arsenical copper weapons and gold jewelry (Fig. 1). So, from a few initial Chalcolithic utilitarian models, EBA in western Iberia will see the metallurgical products change to fulfil the need to express social status. In several situations they will go together with what we usually call "second generation" bell-beakers (of the Palmela/Geometric and Late Ciempozuelos groups) that we believe take part in the EBA transformation (Senna-Martinez, 2002; Soares e Silva, 1974/1977; Valera, in press). Nevertheless, the available data show that the scale of metallurgical operations is very small and simple,

producing metal mainly through use of open-vessel reduction of copper oxides and/or carbonate ores (Rovira, and Ambert, 2002).

As for the Chalcolithic, the scarcity of the items produced in copper or arsenical copper – not to mention the scarcity of items in gold or silver – and their main association as funerary offerings of select few burials, since the EBA, everything points towards a non-technomical character for the EBA metallurgy of western Iberia (Roberts, 2009: 472). That is something we have to have in mind when we compare it with other European or non-European situations that can be very different (Roberts, Thornton and Pigott, 2009).

The idea explained by Roberts that "…*metallurgy in Western Europe in the 4th and 3rd millennia BC was not a dynamic or innovative technology, but was practised sporadically and at small-scale, to specifications outlined by consumers whose requirements were highly conservative*…" (Roberts, 2009: 473) can easily be expanded to encompass all the Iberian peasant societies with metallurgy from the Chalcolithic to the Late Bronze Age.

Nevertheless, the investment of metal artefacts with new social symbolic meanings during the EBA and MBA goes well together with the growing complexity of a new type of symbolic practices that probably gives legitimacy to the new social order. Namely and besides artefact deposition as select funerary offerings: (1) The first situations of metal artefacts ritual deposition as land or water "deposits" occur during the EBA; (2) These exceptional "packages" of weapons and jewellery items can also appear as iconographic depiction, either *per si*[5] or (less often) as paraphernalia of the first "power anthropomorphic representations"[6].

MBA will see some changes in artefactual types[7] and the appearance, from north to south alongside western Iberia, of the first tin bronze production[8]. However, the scale of metal production remains in a small scale and metal artefacts' use will still be a "luxury" few could afford (Senna-Martinez, 2013a). Moreover, with the exception of the Northwest and Estremadura, the majority of the actual finds, which nevertheless represent a very small part of the total metal finds of the period (still mainly made of arsenical copper), are awls, chisels, riveted daggers and very rare halberds of Cano type[9]. For instance, the earliest binary bronze production in the Southwest (Malhada do Vale da Água, Ferreira do Alentejo – Valério, *et al*., *in press*) seems to occur only in the third quarter of the second millennium BC, closer to the LBA, with only small items, while co-smelting of cassiterite with Cu carbonates and oxides remains the preferential technique to obtain bronze.

In LBA we detect a generalization of binary bronze production to all Iberia regions as well as the first evidences for tin procurement through trench mining. Yet, bronze still is produced, from north

5 - This is both the case of the engraved stone schist slabs covering cist-burials in the Southwest First Bronze Age (Early and Middle – Barceló, 1991; Gomes & Monteiro, 1977) as well of the Galician petroglyphs (Costas Goberna, *et al*. 1997).

6 - As in the case of some stelae and menhir-statues from the Portuguese Beiras and Trás-os-Montes (Sanches and Jorge, 1987; Jorge and Jorge, 1990) as well as the stelae from the Southwest (Barceló, 1991; Gomes, 1994; Gomes & Monteiro, 1977).

7 - So, riveted-hilt swords will replace long daggers (or tongue-swords); riveted daggers replace the previous tongue-daggers; long tanged points replace Palmela points; axes with large cutting edges replace halberds.

8 - The first evidences of binary bronze production can be documented in northwestern Iberia (Sola, Minho – Bettencourt, 2000 – and Fraga dos Corvos, Trás-os-Montes – Senna-Martinez, *et al*. 2011b) in the 2nd quarter of the second millennium BC. The main artefact type produced is the axe of Bujões type.

9 - With only three exemplars made of binary bronze: one from Vila Nova de S. Pedro (Soares, 2005), one from the "covacha" burial of Belmeque (Serpa – Soares, 1994) and another from a probable cist burial from Antas (Tavira – Senna-Martinez, *et al.*, 2013).

Fig. 2 - The two main north-south passages, from the alluvial tin producing areas (Sn), through the Iberian Central Massif: 1- Beira Transmontana/ /Northeast Alentejo; 2- Salamanca/Caceres.

to south all along western Iberia, through the cosmelting, in open vessel, of cassiterite with copper carbonates and/or oxides[10].

Generalization of binary bronze production to all Iberia regions is probably one of the turning points at the beginning of the LBA in this peninsula. Binary bronze production can be radiocarbon-dated to the last quarter of the second millennium BC almost everywhere in Iberia (Castro Martínez, Lull and Micó, 1996). Namely alongside the Atlantic facade from the Northwest (Bettencourt, 1999, 2001; Sampaio and Bettencourt, 2011) through the Portuguese Beira Alta (Senna-Martinez, *et al*. 2011a), Beira Interior (Vilaça, 1997) to the Southwest (Soares, *et al*. 2007).

In terms of scale of production this is clearly a period in which some intensification occurs (new casting techniques – *cire perdue*, overcastting and multiple part molds – and several new artefactual types) alongside generalization of binary bronze production. However this intensification did not significantly change the scale of local ateliers still functioning at household level[11] and for systems largely of self-consumption and little circulation (Senna-Martinez, 2005). Metal in Iberian LBA was still a luxury prestige item[12].

Tin is the critical element in bronze production in Iberia. Early impressions[13] pictured an Iberian Peninsula divided by the Central Massif into a southern copper producing area and a northwestern one producing tin. The realization that the actual

10 - Recently the same producing method was proven for the working area of Entre Águas 5 site (Serpa – Valério, *et al.* 2013) in southern Portugal.

11 - For instance, in the culture groups of the Portuguese Beiras (Baiões/Santa Luzia and Beira Interior) there is evidence of small scale local production in every habitat site excavated in the last three decades (Senna-Martinez, 2011a, p. 287).

12 - For instance, the previously suggested un-economic nature of metal production among the Baiões/Santa Luzia cultural group (Senna-Martinez, 1996) was clarified during the METABRONZE project (2006/2009 – cf. Senna-Martinez, *et al.* 2011a) which confirmed and developed most of the previous research results besides advancing new results and hypotheses. Namely it has been shown that the main productive activities of subsistence land exploitation could well coexist, for some specialized individuals, with small scale mining and metal artefact producing. These were shown to be compatible to be performed inside the settlements, at a "domestic" and "part time" level, as archaeological field data already suggested (Senna-Martinez, *et al.* 2011a, p. 421).

13 - And some not so early – cf. Harding, 2000, p. 197-241, where Iberian data is clearly underestimated, if not sometimes completely ignored.

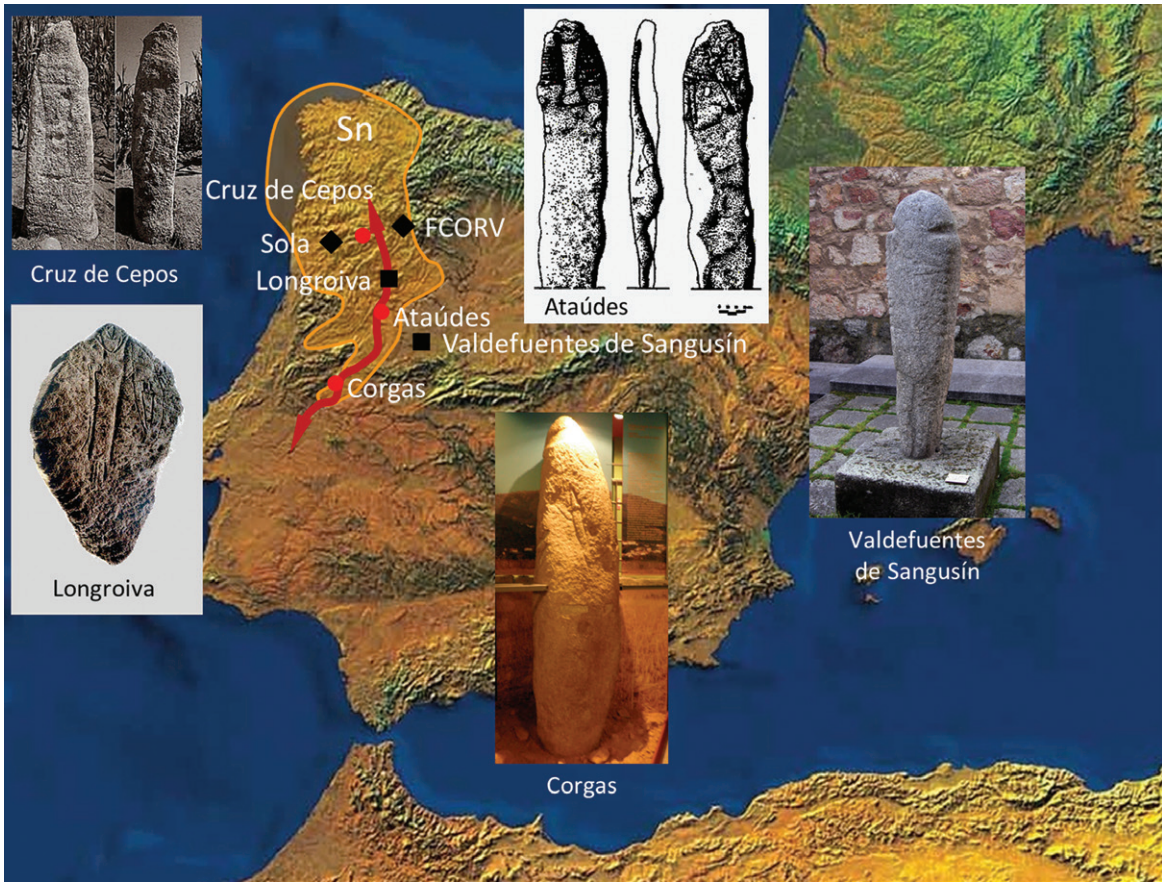

Fig. 3 - The Iberian Peninsula, westerly main "tin-route" and stelae with weapons for the First Bronze Age: Sn – the area rich in alluvial tin placers; ■ EBA stelae; ◆ MBA habitat sites; ● MBA stelae.

quantities of metal produced in Iberia during the Bronze Age were indeed small made it necessary to take into consideration available small sources for copper. Those sources, mainly secondary gossams from sulphides' ores, are available throughout Iberia, completely changing the picture of copper availability (Geirinhas, *et al*. 2011).

Considering tin, a large area – encompassing all the Northwest and extending through the Portuguese Beiras till the Tagus River – is rich in alluvial deposits with tin and sometimes gold placers. Even taking into consideration that LBA is the period when first evidences for tin procurement through trench mining appear in Iberia[14], alluvial cassiterite and gold probably constituted the main source for both metals till the beginning of the Iron Age[15] (Senna-Martinez, 2011).

Whatever we consider to be the way tin cir-

14 - For instance in the cases of the Logrosan (Cáceres – Rodríguez Díaz, et al. 2001) and Orgens mines (Viseu – Correia, Silva and Vaz, 1979; Senna-Martinez, *et al.* 2011a, p. 412).

15 - That will probably explain why generalization of binary bronze production to all Iberian regions only happened with the beginning of the LBA (c.1250-1000 BC).

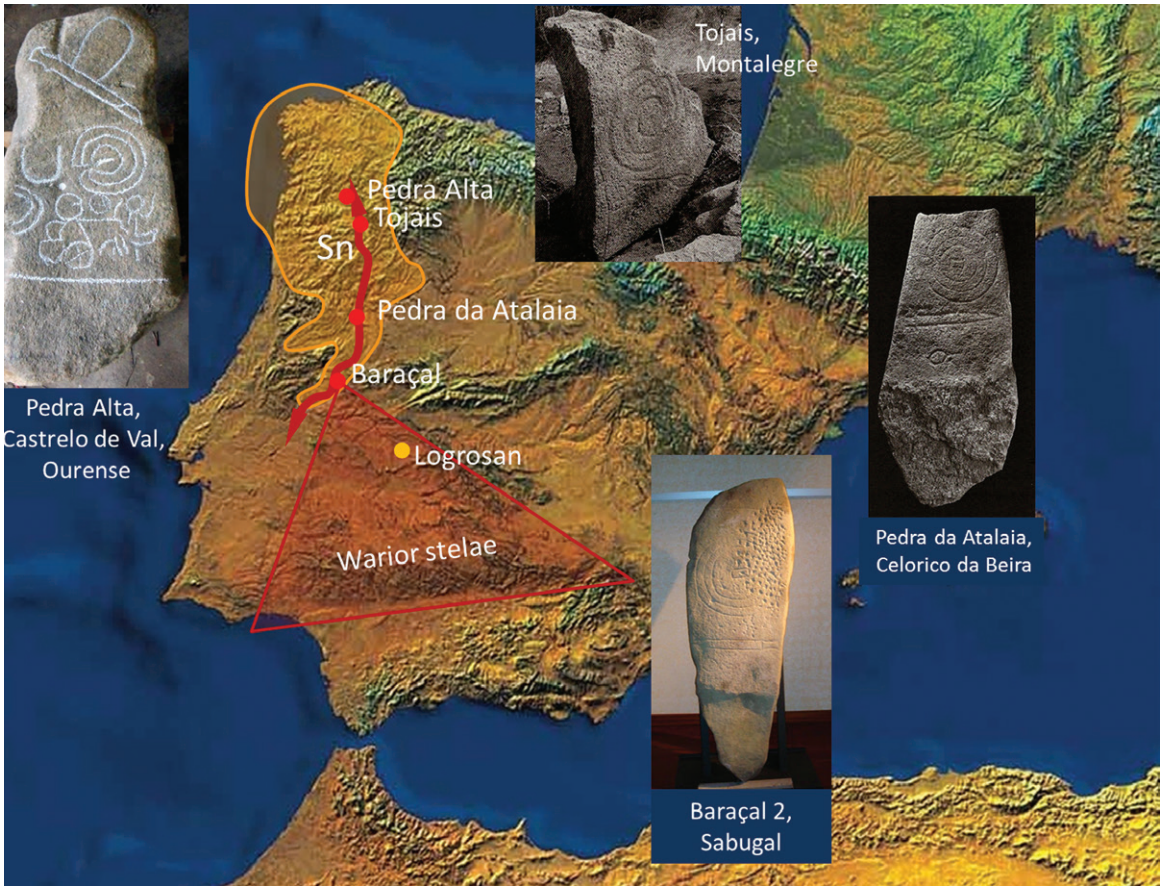

Fig. 4 - The Iberian Peninsula, westerly main "tin-route" and LBA "Warrior stelae": Sn – the area rich in alluvial tin placers; ● new "panoply variant stelae"; ● Logrosan mine.

culated[16], the question of land-routes is capital for its understanding in the Bronze Age. The two main north-south passages, from the alluvial tin producing areas, through the Iberian Central Massif (Fig. 2) are the Beira Transmontana/Northeast Alentejo, westerly, and the Salamanca/Caceres corridors which makes a slightly eastwards detour necessary (Senna-Martinez, 2013a, b).

Already during the EBA and MBA the western corridor through the Portuguese Beiras is signalled by the first "power figures", materialized in the menhir-statues with weapons placed alongside it from Beira Baixa to southern Galicia[17]. This is one of the routes followed by social and techno-

16 - As there is no evidence for mercantile circulation in Iberia before the Early Iron Age, and then only for its southern half, personally we think that the most probable way that circulation of tin occurred was through the same hand-to-hand chains of solidarities between local/regional elites that were sustained probably through bride exchange, and that could also explain other situations of cultural know-how circulation (Senna-Martinez, *et al*. 2011a, p. 413-414).

17 - From south to north (cf. Senna-Martinez, 2013): Corgas (Fundão – Banha, Veiga and Ferro, 2009); Ataúdes (Figueira de Castelo Rodrigo – Vilaça *et al.*, 2001); Valdefuentes de Sangusín (Salamanca – Santonja Gómez and Santonja Alonso, 1978); Nave (Moimenta da Beira – Cruz, D. and Santos, A.T., 2011); Longroiva (Mêda – Almagro, 1966: Lâm. XXX); Chaves e Faiões (Jorge and Jorge, 1990); Cruz de Cepos (Montalegre – Alves e Reis, 2011) and Tameirón (A Gudiña-Riós, Ourense – Comendador-Rey, Rodríguez Muñiz and Manteiga Brea, 2011).

logical exchanges between the north and south of the Tagus basin (Fig. 3). It could also be one of the routes followed to convey both the know-how and cassiterite necessary to binary bronze production (Senna-Martinez, et. al. 2013; Senna-Martinez, 2013a).

During the LBA the above referred western route will continue to be marked by the presence alongside it of the so called "warrior stelae" (*Estelas de Guerrero* – Nunes, 1960; Nunes and Rodrigues, 1957; Ruiz-Gálvez and Galán Domingo, 1991; Galán Domingo, 1994). The distribution of the "panoply" variant of the warrior stelae (Galán Domingo, 1994, p. 47), concentrated in Beira Interior and Spanish Estremadura, is now proved to extend northwards till southern Galicia (Fig. 4) alongside the route we have been discussing[18].

Despite north-south and middle/long distance contacts alongside the above discussed corridor, all the available evidence accounts for low intensity economic exchanges which focused on fashion and prestige items, which characterize Iberian interregional contacts during the Bronze Age (Senna-Martinez, 2013a, b).

So, a clear increase in complexity exists during the Bronze Age regarding metallurgical technology. Nevertheless, since metals in western Iberia Bronze Age seem to have an ideotechnical rather than technomic function, only in this sense can we say they have something to contribute to make the world go round and seem to do it in a very conservative way.

Social structure, technology and social complexity: hierarchy versus heterarchy in western Iberia Bronze Age

Production of explanatory models for the western Europe Bronze Age has been dominated by the *Chiefdom* concept, originally proposed by Service (1962). But, since the nineties of the twentieth century, the mechanic assumption of that concept has been increasingly criticized (Kristiansen, 1991; Levy, 1995). A predominantly hierarchic type of explanation came together with the chiefdom concept and was also subject to criticism. The alternative was the new concept of "Heterarchy"[19].

The idea that the initial chiefdom concept was a too vague and rigid formulation to account for all the nuances of the transformation processes of the European Bronze and Iron Age societies gradually made its way and extended to encompass other regional areas (Ehrenreich, Crumley and Levy, 1995; Macintosh, 1999).

Earle's (2002) revision and split into two of the chiefdom concept[20] and the parallel concept of "decentralised complexity" proposed by Kristiansen (2010) are particularly interesting to our subject area study, Western Iberia Bronze Age, and both open a path to consider what the main evidences available for Western Iberia Bronze Age imply for social complexity.

In western Iberia Bronze Age, both the previously mentioned existence of "power figures" and individual "high status burials" (mostly male, and with an accompanying funerary package of metallic weapons and jewelry) are usually presented as an argument towards the existence of

18 - From south to north (cf. Senna-Martinez, 2013a, b): Pedra da Atalaia 2 (Celorico da Beira – Vilaça, Santos and Gomes, 2011); Tojais (Montalegre – Alves and Reis, 2011) and Pedra Alta (Castrelo do Val, Ourense – http://ccaa.elpais.com/ccaa/2012/02/03/galicia/1328301594_419900.html).

19 - "A formal structure, usually represented by a diagram of connected nodes, without any single permanent uppermost node. [From Greek heteros other, different + archē sovereignty]". (http://www.thefreedictionary.com/heterarchy.

20 - The proposed dichotomy between chieftaincies and strict sense chiefdoms (2002, p. 69)

a hierarchic society. We think that they probably account for social stratification and ideotechnique differentiation of some male elements, but we also think that other data possibly point towards a degree of heterarchy.

We currently have a deficit of information about EBA and MBA settlement systems in western Iberia. Susana Oliveira Jorge (Jorge, 1996/1997) has recognized this situation to be probably due to the proliferation of smaller, more disperse and consequently less archaeographically visible settlements after the "Chalcolithic collapse".

For the areas where we have some information[21], there is not anywhere evidence of the existence of special "chief's houses", much less of a hierarchical settlement system or central food storage facilities, thus implying the lack of evidence of centralized accumulation.

The end of MBA seems to correspond to a partial collapse situation recovered with the beginning of the LBA, where the more abundant evidence for regional settlement systems[22] shows sites that have higher archaeographic visibility, and are clearly positioned as to visually control the surrounding territory but with no real evidence of fortification. Nevertheless, because of their small size (generally much less then 1ha) and population (generally less than 300 inhabitants) they probably constituted equivalent and surely cooperative nodes in the regional networks without evidence of any regional "central place", much less of a "capital". Food storage in the LBA seems also to maintain domestic characteristics without centralized facilities, and there are no evidences for "chief's houses" too.

All the available data on settlement systems in western Iberia during the Bronze Age seems thus to contradict the "chiefdom hypothesis". "Power figures" without archaeographically visible "power sees" seem to be the rule. We will have to wait to the second half of the LBA in Alentejo for the appearance of the first settlements large and complex enough to be proposed to assume such a role (Serra, 2014).

The above discussed technological changes that we can detect during the Bronze Age, for instance in pottery or metallurgy, are few and don't seem to affect the settlement patterns or their internal arrangements. Likewise, both metal artefacts typologies in burial context and the iconography of "power figures" may see some typological changes in the metal paraphernalia present but don't change what we think to be their meaning as "symbols of power" (Senna-Martinez, 1996, 2009, 2014).

While "elite burials" dominate the EBA and MBA[23] the overall picture for Iberia's LBA will see cremation becoming the preferred form of body disposal associated to an almost complete lack of burial offerings (Senna-Martinez, 2014, 41). This suggests the loss of importance of burial as a means of status enhancement and thus its transfer to other forms of representation, namely in the realm of the living. The generalized reconfiguration of settlement systems that occurs in the beginning of the LBA in Iberia opens up new spaces and opportunities of social representation (Jorge, 1995). Of these new opportunities, the banquet or "symposium" surely occupied a preeminent place (Senna-Martinez, 1996; Armada, 2013, 2011).

In short, the absence of "capital" places, the undifferentiated housing within settlements, the domestic nature of storage, the probable domestic nature of the main craft productions – namely pottery and metal artefacts - together with clear burial,

21 - Mostly from the Southwest, Portuguese Estremadura and Northern Portugal.

22 - For instance in the Portuguese Beiras (Senna-Martinez, 1996, 2013b; Senna-Martinez *et al*., 2011a; Vilaça, 1995) and Minho (Bettencourt, 1999).

23 - Nevertheless, we should take into account that – with the possible and recent exception of the Southwest – the evidence for Western Iberia EBA and MBA burial practice seems to be biased towards "elite burials".

iconographic and metal possession status differentiation (in between other aspects) all points towards a social model approaching Earle's chieftainship concept. I.e. with heterarchic structures, together with network type strategies and wealth financing of its economy (Earle, 2002, p.69).

Concluding...

The few technological novelties that we can detect along the western Iberia Bronze Age don't seem to very much influence the organizational strategies we think correspondent to its societies. These strategies seem to correspond to organizations that privilege network strategies over more corporate ones. The tendency for situations that seem to adopt "wealth finance" solutions to legitimate social status probably constitutes the reason to this state of affairs which could better accommodate more heterarchic social solutions.

So we think that technological development doesn't always equate to social complexity growth, especially in situations, like in western Iberia Bronze Age, where there is no direct technomic progress derived.

So, it does not seem possible to uncritically maintain hierarchic models like *chiefdom* or *state* to account for the social formations of western Iberia Bronze Age.

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