

Archaeographic and conceptual advances in interpreting Iberian Neolithisation

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ABSTRACT – *Prehistoric research has evolved, in the last decade, from a mere collaboration of disciplines into a new, trans-disciplinary, approach to Prehistoric contexts. New stable research teams, involving researchers with various scientific backgrounds (geology, botanic, anthropology, history, mathematics, geography, etc.) working together, have learned their diversified “vocabularies” and methodologies. As a main result, a more holistic approach to Prehistory is to be considered. Previous models of the Neolithic on the Atlantic side of Iberia were focused on material culture and strict economics (this being an important improvement concerning previous typological series). Current research became open to discussing the meaning of concepts like “food production”, “chiefdom” or “territory”. It also dropped the “Portuguese/Spanish” frontier that pervaded previous models (to the limited exception of some interpretations for megaliths). Finally, new and important data is now confirming that the “Cardial Neolithic” coastal spread was only one, and a minor element in the Neolithisation of the western seaboard.*

IZVLEČEK – *Prazgodovinske raziskave so v zadnjem desetletju na osnovi sodelovanja različnih disciplin dosegle nov, transdisciplinarni pristop k prazgodovini. Strokovnjaki z različnih znanstvenih področij (geologija, botanika, antropologija, zgodovina, matematika, geografija itd.), zbrani v novih stalnih raziskovalnih ekipah, so se spoznali z različnimi strokovnimi besednjaki in metodologijami. Glavni rezultat tega je bolj celosten pristop k prazgodovini. Prejšnji modeli neolitika na atlantski strani Iberskega polotoka so se osredotočali na materialno kulturo in gospodarstvo v ozkem pomenu besede (kar je pomemben napredek v primerjavi zgolj s tipologijo). Današnje raziskave pa so odprte za razpravljanje o pomenu konceptov, kot so “proizvodnja hrane”, “poglarstvo” in “teritorij”... Ravno tako smo presegli omejevanje z mejo Portugalska/Španija, ki je vplivala na starejše modele (z delno izjemo nekaterih interpretacij megalitov). In končno, novi in pomembni podatki sedaj potrjujejo, da je bilo razširjanje *impresso cardium* neolitika ob obali le eno in da je bil to le manj pomemben element pri neolitizaciji zahodne obale.*

KEY WORDS – *Iberia; Neolithic; interpretative models*

Archaeology is a long term inquiry into the past, aimed at recognising major trends and paths. Even the increasingly detailed chronological methods do not enable us to achieve the level of identifying global synchrony. But we are able to characterise territories, to identify migration routes, raw materials exchange, and so forth. Archaeologists may look at adaptation mechanisms, both to environmental changes and social dynamics. They do so approaching resources management or technological improvements, but also inferring social change.

Behind the concepts of Neolithic or Neolithisation rests our notion that the shift towards food production and increasing social complexity was a major achievement from the point of human cultural evolution. This notion derives from a mere observation: in the framework of competition between hunter-gathering and agro-pastoralism, the latter prevailed, enabling demographic growth and wealth accumulation. Regardless of the interpretative models (population pressure or other), the fact remains that in the long term, agro-pastoral models have proved to

have greater competitiveness. Agro-pastoralism was a step further towards globalisation, in rendering human behaviour more homogeneous (a process already accelerating within later Palaeolithic communities that engaged in specific symbiotic relations).

This Neolithisation is often perceived as progress from the later hunter-gatherer economies towards food production, assuming that animal and cereal domestication and increased social complexity were recognised as an improvement in these societies.

The Neolithic may hence be interpreted as a process of creating an artificial environment, an anthropic environment, filled in by selected species, burned prairies, and stone or wood constructions. Man acted in transforming more stable environments into quantitatively more productive, but less diverse and stable ones. As an example, deforestation enabled crop growth, but impoverished soils and accelerated erosion.

One must pay attention, though, to troubling evidence in this process, which suggests it was not so homogeneous: not all species were domesticated at the same time and in the same way. The earliest evidence varies greatly from site to site. There is a great diversity of strategies: hunting, gathering, animal breeding, and cultivation evolve side by side for over two millennia in Iberia. Behind demographic growth there are signs, in some cases, of seasonal hunger.

The earliest efforts to deal with the issue of the transition into a system once recognised as the origin of our own society were oriented towards the identification of its single, or main, origin. The focus could be on technological improvements (with Lubbock), major socio-economic changes (with Childe), adaptation economics (with Grahaeme Clarke and, later, Eric Higgs), population pressure, or other factors. But the goal was to identify the origin of the process, perceived as a single trend. To a large extent, the different theoretical approaches, from historic-culturalism onwards, “respected” this goal. Not surprisingly, Orientalism was the prevailing explanatory framework, since it provided a “one-sense” explanatory flow. The “wave of advance” model, established by Luca Cavalli-Sforza, is the most coherent expression of this approach: one centre, one process, one cause (even if the latter was subject to debate). We all know the arguments, taking the greater oriental antiquity of domestication, pottery (including cardial pottery) or population pressure, as well as the alleged absence, in the West, of the main domesticated species.

It is curious to notice that the dawn of archaeology was, to a large extent, much open to contradictory explanations, namely when dealing with quaternary stratigraphies. But this was not the case of Neolithic studies, and I believe that a major shift only occurred in the last quarter of the 20th century, when a new generation of models, focused on the process of transition rather than its ultimate result, were developed. The “availability model”, by Marek Zvelebil and Peter Rowley-Conwy, and the “islands filter model”, by James Lewthwaite, were among these, and the most influential in Iberian studies. More than before, they addressed the issues of local dynamics and continuity, and drew attention to the differences in rhythm of the process: Mesolithic sedentary sites, hunting farmers, pastoralists without agriculture, seasonalism, and so on (*Jorge 1998*).

This new generation of models was a response to the previous rather linear explanations, and provided more questions than answers. It was never a real alternative, but a questioning of earlier approaches. In Portugal, it dominated most of the prehistoric research developed in the last 30 years, but proved to be insufficient to break the previous linear approaches. There is a good reason for this: questioning rather than answering, these models became less popular in an expanding archaeology community, largely oriented to global heritage concerns, who felt the need to start their studies with a basic linear corpus of data associated with the old models. University demography, in this case, was the weapon used by “old timers”. In fact, it is significant that three decades of research did not produce a single adjourned manual of Portuguese Prehistory, even if several very important books have been published, namely a “New History of Portugal”, with an updated and interrogating Neolithic excellent section by Susana Jorge (*1990*). The manual, actually, would finally be offered by João Cardoso (*2003*), but following the old linear approaches.

In fact, the data accumulated in the last 30 years, largely gathered following the interrogations suggested by the second generation models, now require, at last, some answers (*Cruz 1997; Cruz and Oosterbeek 2000; 2001; 2002a; 2002b; Oosterbeek 1997; 1999*). It is my opinion that only two possible avenues may be followed at present: to resume diffusionism (which offers a coherent explanatory framework) or to build an alternative theoretical background. Let me make a short excursion into the evidence, taking the North Ribatejo region as a case study.

The North Ribatejo is an ecotonal region defined as the confluence towards the Tagus valley of three main geomorphological units. To the east, one finds ancient massif granitic, schist and gneiss formations. To the west are located Secondary limestone hills, and to the south, along the river banks, are recorded Tertiary and Quaternary detritic deposits. The middle Tagus basin, with its tributary main rivers (Ocreza, Eiras, Rio Frio, Moinhos, Zêzere, Nabão/Atalaia and Almonda – all on its north bank) unites these different units.

By the mid 7th to early 6th millennium BC, whereas in the lower, estuarine, part of the Tagus valley, Mesolithic groups were managing the landscape by building shell middens (as in the Muge area), other groups were still mainly mobile (sites of Amoreira, or Coalhos), leaving behind several sites dominated by macrolithic industries, mainly made on quartzite, associated with a flint bladelet industry. The latter is little more than residual evidence composed of broken tools, suggesting that these sites were temporary camps, and that once people left they would leave behind only the broken (flint) and coarse (quartzite) tools. A thorough geo-archaeological review of these sites enabled their clear allocation to the Holocene period (previously doubted by many authors). It is in these macrolithic contexts that pottery and polished stone axes first occur, in the transition to the 6th millennium (sites at Amoreira and, probably, Monte Pedregoso). One must consider that this chronology is equivalent to some Andalusian sites, and slightly older (but, in fact, partially overlapping) than the earliest dates for cardial contexts (Cabrana and Caldeirão). The bulk of the lithic industry is coarse, dominated by direct abrupt percussion. The location of these settlements suggests an exploitation of riverside resources, including hunting and fishing (although no bone remains exist).

In the second half of the 6th millennium this scenario does not seem to have changed, although a few kilometres to the west, in the limestone area, cardial burials have been excavated (Caldeirão and Pena d'Água). Although we do not have absolute dates for the building phase of the earliest megaliths in the region, they are associated with industries similar to the settlement of Amoreira: coarse pottery, heavy duty tools, scarce flint objects, and polished stone axes. The fabrics of the pottery, and the lithic raw materials, coincide with those found in Neolithic non-cardial sites in the Tagus valley, and indicate a strong divergence from the cardial contexts, which are dominated by good quality decorated pottery

and flint objects. One may trace the origins of megaliths in the other margin of the Tagus valley, in the Alentejo region, and one may also find another link between the two regions: rock art.

Thus, one observes that the earliest Neolithic is introduced in the region through two routes. One, occupying part of the limestone area, begins with burial cave contexts with cardial or epicardial pottery (the caves of Caldeirão, Nossa Senhora das Lapas, Almonda and, later, Cadaval, and even a cave as far North as the Alvaizere mountains). Its probable origin is the Atlantic coast, where Neolithic sailors might have arrived from the Central Mediterranean, interacting with coastal Mesolithic population (*Araújo 1998; Soares 1997; Soares and Silva 2001*).

The other route, which occupies the Eastern and Southern territories, is dominated by macrolithic contexts associated with plain coarse pottery. These are dominant in settlements like Amoreira (Tagus valley), but also in the foundation layers of passage graves (e.g. Val da Laje). Their origin is to be found to the southeast, in the Alentejo, suggesting an inland spread of the Neolithic (*Calado 2001; Diniz 2001a; 2001b; Gonçalves 2001; 2002*).

This approach denies the dual vision of the Neolithic, opposing Neolithic incomers to epipalaeolithic indigenous people, a model long supported by Jean Guilaine (*1996*) and recently re-enacted by João Zilhão (*1992*). In the view of these authors, a more selective use of the available data, relying upon a minority of sites (e.g. the cave of Caldeirão in Portugal), suggests that the Neolithic package expanded to the West associated with cardial pottery, establishing, as J. Zilhão proposed for Iberia, “Neolithic enclaves”. But such an exercise leads to difficulties: if the Neolithic is associated with a coastal “cardial spread”, why do we find very old cardial ceramics inland? If shell-middens are the result of estuarine adaptation, why do we find them at great distances, like 800 metres a. s.l. and 40 km from the coast? If megaliths are part of a similar trend, why can't we identify a sound structural chronology for them? And if they are not, why can we find so many convergences, both in architecture and art? Why can we see similar bone arrangements in caves and megaliths? Aren't these signs of a web rather than of exclusive enclaves?

At this point we may resume our first arguments. I have mentioned that the questioning of established “truth” has been successfully raised in the past 30

years, but without leading to the construction of a global alternative interpretation model. This is, perhaps, because we are still operating in the “true/false” framework, which is efficient when considering archaeological evidence (objects, moments), but faces difficulties when dealing with temporal sequences (the main goal of our research). The latter are focused on objects’ dynamics, and requires a non-Aristotelian framework, with three alternatives: possible (theoretically determined), true (instantly observed), and absurd (not possible).

Since all archaeological temporal distributions are aleatory (their comprehensive description is never shorter than their extension), one has to take this into consideration in the interpretation process. In fact, the available data (radiocarbon dates or other) is never a sample of the total universe of potential

data, but a mere fragment of it. One must build a method to approach such aleatory distribution *Bogossian 1997; Chaitin 1975*).

The evidence mentioned above suggests that the Neolithic was a process without major material breaks, with several inter-group mechanisms, in which none of the material elements that integrate the “Neolithic package” needs to be present. A process where news is differentially and selectively accepted by some or imposed to others (see *Vicent-Garcia 1997*).

We are still far from being able to establish a global alternative theory to the current dominating framework that, ultimately, was generated with historical-culturalism. But I believe one head pursue in such a direction, using non-Aristotelian logics and mathematics as a guide.

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REFERENCES

- ARAÚJO A. C. 1998. O concheiro de Toledo (Lourinhã) no quadro das adaptações humanas do Pós-Glaciário no litoral da Estremadura. *Revista Portuguesa de Arqueologia 1(2)*: 20–38.
- BOGHOSSIAN P. 1997. O que o embuste de Sokal nos deve ensinar. *Disputatio*, vol. 2 (ed. Internet: purl.inesc.pt/pub/disputatio).
- CALADO M. 2001. *Da Serra d’Ossa ao Guadiana*. Um estudo de Pré-História regional, Lisboa, Instituto Português de Arqueologia.
- CARDOSO J. L. 2002. *Pré-História de Portugal*. Lisboa, Verbo.
- CHAITIN G. 1975. Randomness and Mathematical Proof. *Scientific American*, 232–nº5: 47–52 (versão html: www.cs.auckland.ac.nz/CDMTCS/Chaitin).
- CRUZ A. R. (1997). *Neolitização do Vale do Nabão: do Neolítico à Idade do Bronze*. Tomar, ARKEOS 3, CEIPAR.
- CRUZ A. R., OOSTERBEEK L. coord. 2000. Territórios, Mobilidade e Povoamento no Alto Ribatejo I – indústrias e ambientes. Série ARKEOS, vol. 9, Centro Europeu de Investigação da Pré-História do Alto Ribatejo.
- coord. 2001. Territórios, Mobilidade e Povoamento no Alto Ribatejo II - Santa Cita e o Quaterário da Região. Série ARKEOS, vol. 11, Centro Europeu de Investigação da Pré-História do Alto Ribatejo.
- coord. 2002a. Territórios, Mobilidade e Povoamento no Alto Ribatejo III – Arte Pré-Histórica e o seu contexto. Série ARKEOS, vol. 12, Centro Europeu de Investigação da Pré-História do Alto Ribatejo.
- coord. 2002b. Territórios, Mobilidade e Povoamento no Alto Ribatejo III – Indústrias macrolíticas. Série ARKEOS, vol. 13, Centro Europeu de Investigação da Pré-História do Alto Ribatejo.
- DINIZ M. 2001a. O sítio neolítico da Valada do Mato, Évora: problemas e perspectivas. *Revista Portuguesa de Arqueologia 4(1)*: 45–59.
- 2001b. Neolitização e Megalitismo: Arquitecturas do Tempo no Espaço. In Gonçalves, V. S. (ed.), *Muitas antas, pouca gente – Actas do I Colóquio Internacional sobre Megalitismo: 105–116*.
- GONÇALVES V. S. (ed.) 2001. *Muitas antas, pouca gente – Actas do I Colóquio Internacional sobre Megalitismo*.

2002. Lugares de povoamento das antigas sociedades camponesas entre o Guadiana e a Ribeira do Álamo (Reguengos de Monsaraz): um ponto da situação em inícios de 2002. *Revista Portuguesa de Arqueologia* 5(2): 153–189.
- GUILAINE J. 1996. La Neolithisation de la Méditerranée Occidentale, In R. G. Cremonesi, J. Guilaine, J. L'Helgouac'h (eds.), *The Neolithic in the Near East and Europe, Forlé, XIII International Congress of Prehistoric and Protohistoric Sciences*: 53–68.
- JORGE S. O. 1990. Consolidação do sistema agro-pastoril. In J. Alarcão (coord.), *Nova História de Portugal, vol. I. Das origens à romanização*: 163–212.
1998. *Domesticar a terra*. Lisboa, Gradiva.
- OOSTERBEEK L. 1997. *Echoes from the East: the western network. An insight to unequal and combined development, 7000–2000 BC*. Londres, University of London, PhD. Dissertation (2 vols.)
1999. The Neolithisation of North Ribatejo (Portugal). *Journal of Iberian Archaeology* 1 (no prelo).
- SOARES J. 1997. A transição para as formações sociais neolíticas na costa Sudoeste portuguesa. In *O Neolítico atlântico e as orixes do megalitismo, Santiago de Compostela*: 587–608.
- SOARES J., DA SILVA C. T. 2001. Protomegalitismo no Sul de Portugal: inauguração das paisagens megalíticas. In Gonçalves V. S. (ed.), *Muitas antas, pouca gente – Actas do I Colóquio Internacional sobre Megalitismo, Lisboa, Instituto Português de Arqueologia*: 117–134.
- VICENT-GARCIA J. 1997. The Island Filter Model Revisited. In M. S. Balmuth A., Gilman L., Prados-Torreira (eds.), *Encounters and Transformations. The archaeology of Iberia in transition*: 1–13.
- ZILHÃO J. 1992. *Gruta do Caldeirão. O Neolítico Antigo*, Lisboa, IPPAR.

