



DECODING BELIEFS IN THE TAGUS VALLEY

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ABSTRACT - Being cultural means to be capable of living within a systemic network, which implies a certain degree of understanding of basic positional notions: space (where am I?), time (when did something happen?) and, relating both, causality (the cause of something precedes it in time and is spatially related to it). Regardless of which notion one has (irreversible or circular time, continuous or hierarchic time, rational or magic causality), society is able to move forward in a conscious similar path if those notions are widely spread. If there are contradictions in them, then society will face major difficulties.

At the onset of our consciousness, we may only perceive space. It is by observing a space transformation that time is inferred. Traditional societies have a notion of cyclic time, and identities are based on timeless myths. Space is the scenario where human aptitudes are performed, as Kant said. In the space are established relations and performed actions, meant to satisfy (physiological and cultural) needs. Growing social complexity implies growing needs, growing memories, growing learned knowledge, growing relations and actions, growing energy consumption. Hence, culture (the needs) binds together economy (the actions), society (the relations) and environment (energy).

Cultural knowledge of the basic notions of space, time and causality is obtained through practising: when the child of a Paleolithic hunter learned how to prepare an arrow, he was learning the location of different raw materials (space), the effort required to assemble them (time) and the relation of that process with the hunting process as well (causality). But this knowledge had also to be encapsulated in mnemonics and symbols, in order to secure cultural convergence.

RIASSUNTO - Essere cultura vuol dire saper vivere all'interno di una struttura sistemica, che implica un determinato grado di comprensione di concetti posizionali di base: spazio (dove sono?), tempo (quando è successo un evento?) e, in relazione a entrambi, causalità (la causa di un evento lo precede nel tempo ed è connessa a livello spaziale con esso). A prescindere dalla nozione che uno ha (tempo irreversibile o tempo circolare, tempo continuo o gerarchico, causalità razionale o magica), la società riesce ad avanzare in un cammino consapevolmente comune se tali concetti sono largamente diffusi. Se ci sono contraddizioni all'interno di essi, allora la società dovrà affrontare grandi difficoltà.

Alle origine della nostra coscienza, possiamo percepire solo lo spazio. Solo attraverso l'osservazione della trasformazione dello spazio possiamo dedurre il tempo. Le società tradizionali hanno una concezione ciclica del tempo, e le identità sono basate su miti senza tempo. Lo spazio è lo scenario dove le predisposizioni umane vengono messe in scena, come affermava Kant. È nello spazio che vengono stabilite relazioni e condotte azioni finalizzate al soddisfacimento di bisogni (fisiologici e culturali). Una complessità sociale in crescita implica lo sviluppo di bisogni, ricordi, conoscenza acquisita, relazioni e azioni, consumo di energia. Da qui la cultura (i bisogni) lega insieme l'economia (le azioni), la società (le relazioni) e l'ambiente (l'energia).

La conoscenza culturale di tali nozioni fondamentali si ottiene attraverso l'esperienza pratica: nel momento in cui il figlio di un cacciatore paleolitico imparava come costruire una freccia, allo stesso tempo lui apprendeva la collocazione di diverse materie prime (spazio), lo sforzo necessario per assemblarle (tempo) e anche la relazione che collega tale processo alla caccia (causalità). Si rendeva inoltre necessario racchiudere tale conoscenza in simboli e in tecniche mnemoniche affinché fosse assicurata la convergenza culturale.

COGNITIVE NOTIONS

Humans develop certain operational notions that condition their understanding of the contexts. Among these, three main notions are fundamental: the notion of space (and distances), the notion of time (and changes) and the notion of cause (and sequence). Being cultural means to be capable of living within a systemic network, which implies a certain degree of understanding of such basic positional notions: where am I? (space), when did something happen? (time) and, relating both, which is the cause of something, separated from it in time and spatially related to it (causality).

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Regardless of which notion one has (irreversible or circular time, continuous or hierarchic space, rational or magic causality), society is able to move forward in a conscious similar path if those notions are widely spread. If there are contradictions in them, then society will face major difficulties.

At the onset of our consciousness, we may only perceive space (Piaget 1979). Even if space itself is a cognitive abstraction, it remains approachable through the senses, via a series of progressive exclusions (the “other”, separated from “I”) and inclusions (e.g. the child that at a certain moment understands the completeness of his body). Sight, combined with sound and smell, allows for a progressive mastering of distances and thus for the perceptions of compounds of objects, i.e., landscapes. Human activities, as for mammals in general, are hereinafter conditioned by those perceptions, and not only by strict endogenous needs.

It is by observing a space transformation that time is inferred. This notion of time is crucial, since it enables a growing detachment between thought and efficient action, and therefore opens room for complex planning. Planning is also to be observed in several animals, not only mammals, but in the case of humans time is built at a qualitative new scale, due to its implications for a third key notion: cause. Human activities, for this reason, are not only conditioned by needs and contextual perceptions, but by a cognitive understanding of sequences, events becoming effects of given (natural, immanent or transcendent) causes.

The first level of understanding of external objects, features and processes is a strongly anthropocentric one, assigning human properties to other elements (animism and realism build from this), leading towards a belief-driven approach to cause (e.g. magic explanations). In fact, the mere relation between perceived space and time does not generate rational explanatory sequences, because once the notion of space is built through segregation of items (“I am not those objects”) within an anthropocentric reasoning (magic), relating such space (discontinuous and made up of isolated objects) with time (reversible and understood as changing objects according to “their will”), simply generates a transcendent causality.

A second level of understanding is generated by gesture and techniques. Once humans experiment gestures, they recognize that events may be a (con)sequence of their own activity, thus developing a notion of human driven causal mechanism. Whereas external causality is always reversible (depending on the objects “will”), immanent causality may be understood as irreversible (one’s causal actions are in principle in the past, even if societies may believe in magical processes also at this level). But when such causes are associated with objects production, the mastering of a causal sequence of gestures becomes necessarily irreversible (it is not possible to build a sickle without a prior retrieval of the required raw materials. Thus, technology is the driving process that builds physical causality and, from it, irreversible time and continuous space.

ROCK ART AS A MEANS TO APPROACH COGNITIVE NOTIONS

Notions do not leave a trace in the archaeological record, but two major processes in building those notions do: movement (associated to displacement) and technology (associated to gesture). One may assess such processes when studying raw materials provenance, for instance. Rock art itself is an archaeological product that may be assessed in terms of materials and techniques. But on occasions it has the specific characteristic of resulting from gestures that do not relate directly to short term causal sequences (as when producing a side-scraper, or even when simply scratching a rock for no specific purpose, for instance) but do intervene as mediation between needs and resources. In this sense, rock art seats in the context of the above mentioned detachment between thought and efficient action, as well as of the notion of human driven causal sequence.

The difficulty, though, is on how to study irreversible processes involving societies who do not have an irreversible notion of time, through archaeological remains (Alarcão 1995, Oosterbeek 2000)?

Humans live in territories but act on landscapes, i.e., on their perceptions of such territories, conditioned by knowledge and cognitive capacities. The relation between rock art and landscapes as for long been accepted, namely when approaching rock art sites as landscape markers (specific places, or *locus*, in the landscape), for instance. But rock art also relates to representations (it is not only part of the landscape, but often it comprehends a specific representation of landscape items) and performance (it is often associated to ceremonial activities that bind together a group (e.g. initiation or passage rites, feasts or other). A contextual approach to rock art, using it as one more component of the archaeological set of evidences, is thus required (see Fig.1).

Traditional societies have a notion of cyclic time, and identities are based on timeless (or discontinuous time) myths. Space is the scenario where human aptitudes are performed, as Kant said. It is in space that are established relations and performed actions, meant to satisfy (physiological and cultural) needs. Growing social complexity implies growing needs, growing memories, growing learned knowledge, growing relations and actions, growing energy consumption. Hence, culture (the needs) binds together economy (the actions), society (the relations) and environment (energy). Cultural knowledge of the basic notions of space, time and causality is obtained through practicing: when the child of a Palaeolithic hunter learned how to prepare an ar-

row, he was learning the location of different raw materials (space), the effort required to assemble them (time) and the relation of that process with the hunting process as well (causality). But this knowledge had also to be encapsulated in mnemonics and symbols, in order to secure cultural convergence.

THE TAGUS VALLEY ROCK ART

The Tagus valley is known for having one of the major rock art complexes in Iberia, today mostly submerged by water dam reservoirs. The area where this complex seats corresponds to the westernmost edge of the old Iberian massif, dominated by schist and greywacke. The complex western limit is the contact with the widening of the Cenozoic detritic basin and with the Estremadura limestone massif (spread along the Atlantic coast). Hence, it stresses a difference of geomorphology and marks a transitional area where the Tagus can still be crossed in certain times of the year.

Research in the past (Oosterbeek 2000) enabled to recognize two basic cultural clusters at the dawn of agro-pastoralism (see Fig.2). One to the west, related to a spread of farming through the light limestone soils along the coast, from the West Mediterranean into the Atlantic. This cluster is characterized by impressed ware, often decorated with *cardium edule* shells, associated to geometric microliths, domestic animals (cattle, pig, goat) and Mediterranean like beads. Another cluster evolves from Andalucia upwards into the Iberian inland Southwest, possibly profiting from the drainage network of the Guadalquivir, Guadiana and Tagus rivers. This inland cluster is characterized by an heavy lithic industry, predominantly made of quartzite, associated to plain brittle pottery and polished stone, in mobile or seasonal campsites. This inland cluster is also related to the earliest standing stones and later passage graves (Scarre, Oosterbeek & French 2011). A porous frontier may hence be recognized, involving a mosaic of interacting groups (see Fig.3).

These two clusters are in fact associated to two different types of landscapes. A coastal landscape, related to tide cycles, strong humid winds, light and poor soils, a macquis-type vegetation cover and a regular food staple supply exploiting the coastal seasonal ecological cycles. The Sea, the Sun and Crops seem to have been the crucial concerns of these human groups, within a land/sea dichotomy, defining a sharp horizon limit and clear mobility references.

The inland landscape is rather different. The forest diversity (due to the geological and topographic diversity, but also to climatic influence) is, in any case, a barrier to long distance sight when compared to the macquis. Faunal diversity is also greater, as well as botanical diversity in general terms. Soils vary a lot, from light poorer ones (easier to cultivate but producing a low staple) to heavy but highly productive clayish ones (highly productive and offering a wider range of natural resources, but inaccessible to non-metal dependent agricultural technology). This diversity and relative abundance is subject to greater seasonal oscillations, implying a greater mobility for human groups. Frontiers are not so clear, because the human occupation strategies are based on crossing borders and exploiting the stated diversity. Rivers, animals and the forest are the major reference components of the landscape, none of which offers such a clear horizon as the sea.

The rock art complex of the Tagus was first identified in the early 1970's, when assessing the impact of a new dam (Fratel) that would generate a major water reservoir, on archaeological remains. At the time, a small team supported by the Gulbenkian Foundation was able to register on photo some thousands of motives and to produce almost 2.000 latex casts of the most important rocks, before these were submerged. Forty year later, in 2012 and 2013, the Museum of Prehistoric Art of Mação and ITM were able to complete, with the support of the Portuguese Foundation of Science and Technology, the tracing of all these casts.

The rock art complex spreads along more than 40 Km, roughly between the Erges (NE) and the Ocreza (SW) Tagus tributaries (Baptista 1981, Gomes 2010, Abreu 2012). Over a dozen clusters were identified, besides many more isolated occurrences of rock art. The whole complex presents itself as being "organized" by a major natural feature, the "Gates of Ródão" (a narrow quartzite passage that strangles the Tagus at the point it starts bending towards SW). Most rocks are located in the bottom of the river, and were only visible in the late spring and summer, when the water table would be lower; in these occasions the Tagus could be walked across, namely in this part where it is still narrow but with smoother slopes (it tends to be narrow but steep to the East and smooth but too wide to the West).

The motives include several groups: circles and spirals (by far the largest), zoomorphs (namely deer and related representations), anthropomorphs (a minority, but often "signing" the panels) and many other schematic motives. The rocks often offer a "chaos" aspect, not as much due to superimpositions (relatively rare) but to absence of clear apparent structural arrangements (Fig. 4).

Open air rock art is associated to the definition of mobility routes where natural references are not so clear. It is also related, in the rivers, to outstanding natural features (e.g. "Gates of Ródão"), it organises the territory, rendering it humanised and it is almost absent in the coast, where mobility is governed by a clear axis (the sea).



Chronologically it spreads from the Gravetian into recent times, but its major cluster corresponds to the dawn of agro-pastoralism (Oosterbeek 2001, 2009).

The circles and spirals are the most widespread motives. Occasionally transformable (elongated circles that become the body of goats or deer), they are indeed the basis to depict animals, but may also be interpreted as maps (compounds of huts, itineraries...?). But we may also assume that this sort of matrix also relates (or mainly relates) to ideas and concepts. The content of these ideas is for ever lost, since we have no complementary means (namely historical records of coeval societies) to establish reasonable parallels. But a structural approach to this art enables to interpret it as conveying the notion of a discontinuous landscape made of units, of places. Indeed, one striking aspect of the Tagus art is the rarity of superimpositions, suggesting, within the apparent chaotic aspect of the panels, an appearance of additions: each circle, spiral or most other elements, composes at most a limited scene, but no global landscape seems to be present. Each motive or group of motives seems isolated, in fact.

The focuses of the art, within the matrix, are deer (Garcês & Oosterbeek 2009). They may be represented in a sub-naturalist or more schematic way, with fantastic morphologic “transformations” (often becoming hardly recognizable) or in a clear way (namely the “x-ray” depictions), but it remains they are the apparent dominant element. This converges with the status of deers in burials (deer bones have been found associated to Neolithic burials) and settlements (remains associated to food and technology, but perhaps also to a symbolic dimension). Deer are also a good seasonal indicator (antler), a relevant feature for societies heavily dependent from seasonal weather changes. Again, it is not possible to state the exact meaning of this prevalence, but it is useful to understand that the first pastoralists in the region remained highly mobile, and could perhaps recognize the territorial behavior of deer as closer to their own (similar big territories and small groups social organization). But we may accept that this omnipresence of deer and its related scenes (running, hunted as a symbolic element that becomes, on occasions, the equivalent of the Sun – see fig.5), convey notions related to social organization and of economics (mobility, territory, dominance).

Scenes are also identifiable on occasions, even if the proper related tales are beyond our understanding. They emerge from the sub-geometric matrix, and are recurrent associations within the “chaos” of dots and circles, such as the association between an anthropomorph and big spirals, hunting scenes, the anthropomorph carrying a deer (or the Sun), or yet several running deer. They occur, as most of the Tagus art, predominantly in areas often only accessible in the dry season, probably related to the scarcity of food resources in late Spring and Summer, and may relate to prayers for those resources to return. Their location conveys a strong understanding of the topography, the geology and the hydrological cycle, also suggesting a notion of cyclic and reversible time (hence repeating them when the rocks are exposed).

It is very important to consider the location, since it relates to the mobility patters and stresses the relevance of the river for doing the carvings, and not their exact place (otherwise one would expect to have many more superimpositions). Few superimpositions indicate the carvings perenity and the nature of “toll” when crossing the river. Hence, the relevance of the action of carving and not of its exact location seems to be characteristic of the rock art complex. One may consider that the act, the performance, of carving in relation to any river crossing and not to a specific river place, was the main driver of the complex, which would also explain the conservation of previous engravings (prior “tolls” to be respected). This crossing of the Tagus, as of the Guadiana, by early pastoralists, seems to be restricted to the lowlands groups though (precisely where a “non cardinal” Neolithic process is recognizable), with a lesser relevance to the west and a virtual absence to the North (Douro basin). Therefore, the engravings convey the notion of path and the importance of mobility (and not of stable settlement), which meets the observed record of seasonal and brittle settlements at this time.

Carvings dominate the Tagus rock art complex, and they seat mainly in the passages across the river and its tributaries, as mentioned above. But there are also paintings, located in rock shelters on top of steep slopes, like at Pego da Rainha, in Mação (Fig.6). This introduces another dichotomy in the complex, between carved art to be easily spotted (in the bottom of valleys) and restricted painted art (in the often hardly reachable rock shelters). The latter is probably related to ritual performances and conveys not only the detailed knowledge on the territory and on the human group itself, but a technological mastering of different techniques.

DISCUSSION

The recorded characteristics allow us to portrait humans territorial dominance over large “deer territories”, within a notion of discontinuous and hierarchic space, made of places, landscape divides and interchangeable units. It also suggests the organization of the ritual spaces into two axis: an horizontal human (accessible) axis and a vertical “divine” (restricted) axis. A cyclic and reversible time results from a cyclic (seasonal) mobility pattern, guided through material mnemonics and territorial markers (namely the art) and conditioned by envi-

ronmental constraints organized in two major seasons: wet and abundant (with no possible access to the rock art submerged outcrops) and another one dry and scarce.

But what about the causal *nexus* these populations would establish between observed phenomena? A cyclic time based on discontinuous space doesn't generate an immanent causality. Instead, explanatory processes would depend upon hazardous associations of observed phenomena.

Space within rock art can be assessed on occasions, e.g. in the observation of structural resemblance between topography and artistic depictions. Time is still approachable in some cases, e.g. when scenes depict transformations. But causality implies some degree of narrative, and therefore approaching cause within rock art implies to discuss to what extent one can approach narratives within the rock art complexes.

Cause may be represented as a sequence (narrative), a material agent, an intangible relation among otherwise unrelated materialities (magic) and a final, transcendent, major attractor. A cyclic time based on discontinuous space doesn't generate an immanent causality. Instead, explanatory processes would depend upon hazardous associations of observed phenomena. Let one not forget that if we would look at any of Hieronymus Bosh paintings, one could find it very similar to the chaotic record in the Tagus panels. Of course, a structural analysis would allow us to recognize a certain degree of symmetry, or the fact that such old paintings depict several apparently unrelated scenes (illustrating, like in the Tagus, a discontinuous space). One could also recognize a "story" sequence, a coherent set of images that emerge from a blue and reddish matrix, a series of tangible relations (standing for intangible ones). We know much more about Bosh's paintings, but the key consideration is that these are only available to use because we have a lot of extra, written, contextual information, about the author and his beliefs.

In the case of the Tagus, we have no such detailed contextual data, so we are restricted to deduce the main themes of the art (hunting, divinities carrying the Sun or a hunted deer, the growing size of animals from East to West – like in rock F-155 of Fratel, converging with the East-West humans mobility), the nature of its main messages (like praying for water or in honor of the Sun, or for the new season announced by deer antlers fall), but without acceding to its detailed beliefs. Narrative being crucial, it is not possible to clarify the type of causality without the full access to the contents and context.

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HYPOTHESIS

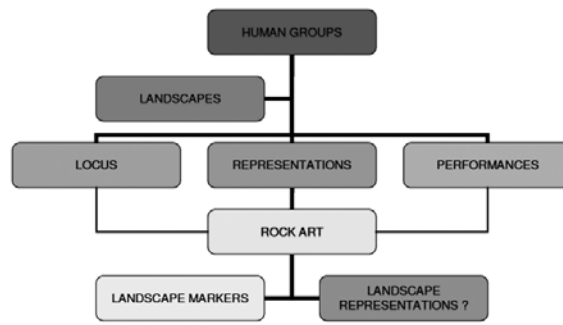


Fig.1 – Hypothesis of study relating rock art to landscape representations.



Fig.2 – Main artefacts assemblages in the Middle Tagus region, Portugal.

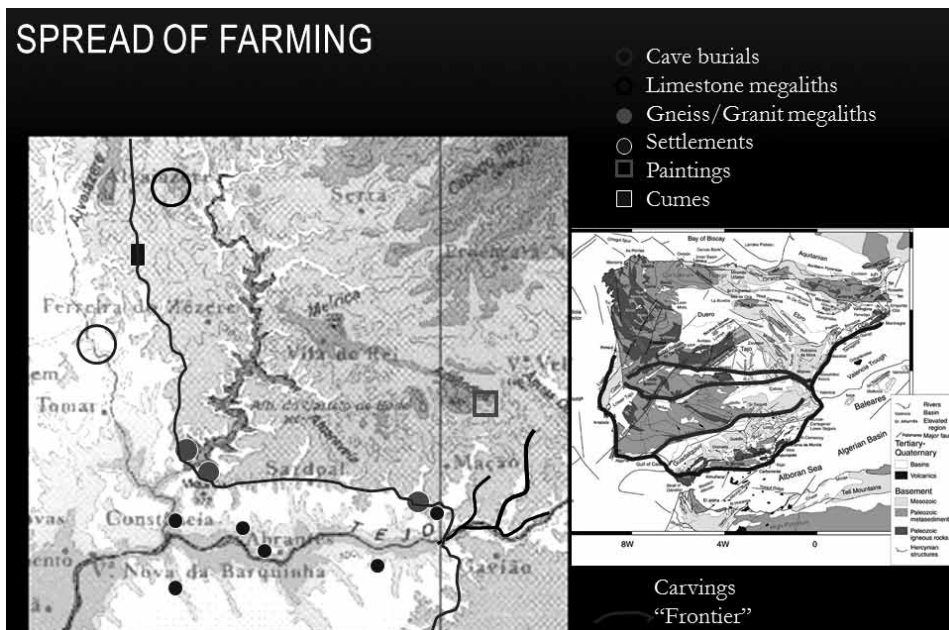


Fig.3 – Possible merging area between the two agro-pastoralist networks in southwest Iberian lowlands.



Fig.4 – Tagus circles, São Simão.



Fig.5 – Scene of anthropomorph carrying a deer, São Simão.



Fig.6 – Pego da Rainha paintings, Mação.

