UDK 903.02(460)"633/634"; 903'12/'13(460)"633/634"
Documenta Praehistorica XXVI

Pots, symbols and territories: the archaeological context of neolithisation in Mediterranean Spain

Joan Bernabeu Aubán
Departament de Prehistoria i d'Arqueologia,
Facultat de Geografía i Història, Universitat de Valencia, Spain
e-mail: jbauban@uv.es

ABSTRACT - *The central idea in this paper is that the spread of agriculture within the Iberian Peninsula resulted from both a kind of demic spread and the acculturation of the Mesolithic substratum. The suggestion of the dual model presented earlier (*Bernabeu 1996; 1997*) emphasises precisely this aspect and its consequence: the existence of a certain regional diversity in the processes of agricultural distribution. Within this context, it is suggested that the variability associated with decorative patterns and styles of impressed pottery and rock art has a clear territorial component. The spread of these symbolic manifestations can be better understood in the context of the interaction between farmers and hunters, and by assuming that assimilation was not the only result of this interaction process.*

IZVLEČEK - *Glavna misel v članku je ta, da je širjenje kmetovanja na Iberskem polotoku posledica obeh vrst demskega širjenja in akulturalizacije mezolitskih prebivalcev. Že predstavljen model dvojnosti (*Bernabeu 1996; 1997*) poudarja prav ta vidik in tudi njegove posledice: obstoj določenih regionalnih razlik v procesih širjenja kmetovanja. V okviru tega menimo, da ima raznolikost vzorcev okraševanja in stilov impresso keramike ter skalne umetnosti izrazito teritorialen pomen. Širjenje teh simbolnih manifestacij lahko bolje razumemo, če upoštevamo medsebojne vplive med kmetovalci in lovci/nabiralci ter če predvidevamo, da asimilacija ni edini rezultat teh medsebojnih vplivov.*

KEY WORDS - *Mediterranean Spain; Neolithisation; migration; colonisation; acculturation; pottery decoration*

1. OVERVIEW

In Mediterranean Spain, as in other Mediterranean regions, subsistence systems based on domestic resources are found together with impressed pottery.

Changing patterns over time in decorative techniques are used to organise the evolution of archaeological entities or cultures (*Bernabeu 1989*). However, the decoration of the first ceramic phases exhibits a rich and complex variety of motifs, including so-called "symbolic" pottery, the relationship of which with post-Palaeolithic rock art (Fig. 1) has been noted in recent studies (*Martí 1989; Hernández and Martí 1994; Martí and Hernández 1988*).

Post-Palaeolithic rock art in Mediterranean Spain has been divided into three major styles: Macro-schematic, Schematic and Levantine. Differences between the first two styles are ambiguous, and probably based upon chronology and evolution. Both are centred on human figures and other abstract motifs, both exhibit a high degree of conceptualism and/or preference for schematism and they are rarely descriptive. On the other hand, the Levantine style is more naturalistic, and combines both human and animal representations, showing a clear descriptive intention. All have good parallels with Neolithic pottery (Fig. 2), which is why recent research claims a Neolithic origin for all post-Palaeolithic rock art *styles (Martí 1988; Hernández and Martí 1994)*. On the other hand, ceramic chronology suggests a priority in the case of the Macro-schematic-Schematic styles; but their spatial distribution seems to show a clear

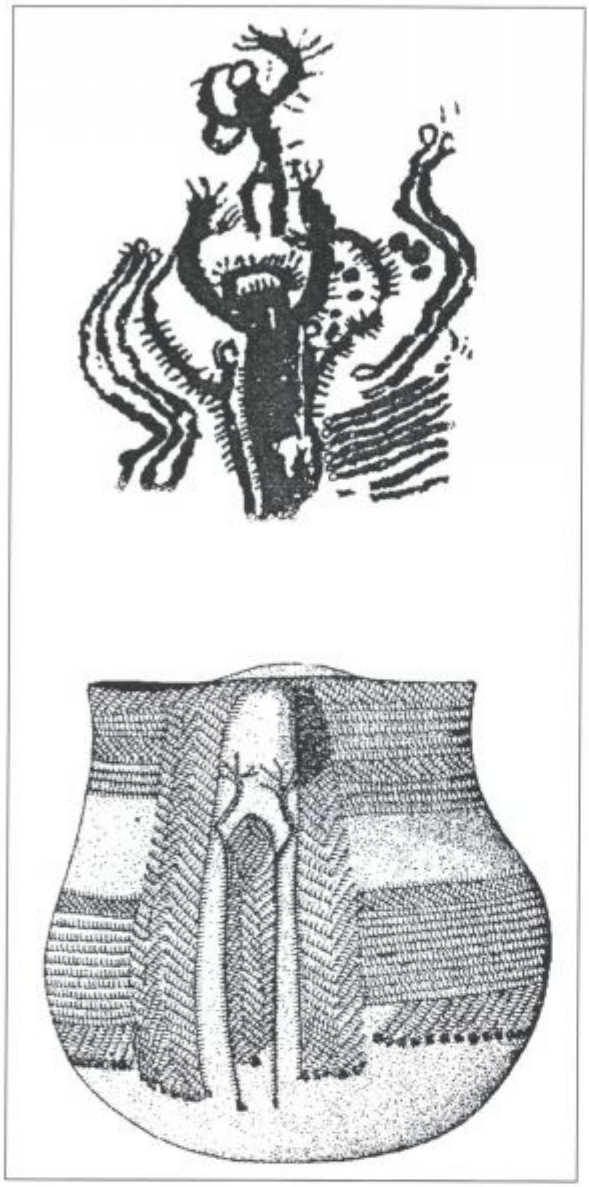

Fig. 1. Human figure from a cardial vase (the Or cave, Alicante) and from the macro-schematic rock shelter of Petracos (Alicante). No scale.

correlation between the Levantine style and Mesolithic ceramic groups, and the Macro-schematic-Schematic style with fully Neolithic groups (*Martí 1989*). Although Schematic style has a clear Neolithic origin, exhibits a greater variability both, in chronology and motifs. Some of them, at lees, could be related with Copper and, probably, Bronze Age cultures. In this circumstances the spatial distribution and association with other archaeological variables are clearly out of meaning in relation with the problem analysed in these paper: the role-played by these symbolic manifestations in the context of the neolithisation process.

For this reason, I think it could be useful to begin by explaining the decorative techniques and their evolution. Next, I will focus on the main features of the neolithisation process, particularly those of the so-called "Dual Model" (*Bernabeu 1996; 1997*), and finally, I will return to the pottery styles, especially those called Symbolic Styles.

1. CHRONOLOGY AND POTTERY DECORATION

The Classical *Cardial* area is a part of the Mediterranean Impressed Ware Group, which includes the Mediterranean regions of Southern France, Spain and Portugal. For this reason it is known as the French-Iberian region. *Cardial* decoration in this region is mainly a coastal phenomenon, which only rarely and occasionally pushes into the nearest inner areas. The cardial area in the Iberian Peninsula includes the Eastern and Southern peninsular regions, where most of the sites in which this decorative technique is quantitatively important are located.

Broadly speaking, the evolution of the Neolithic in the Iberian Peninsula will be summarised as a succession of pottery decoration techniques defining different phases.

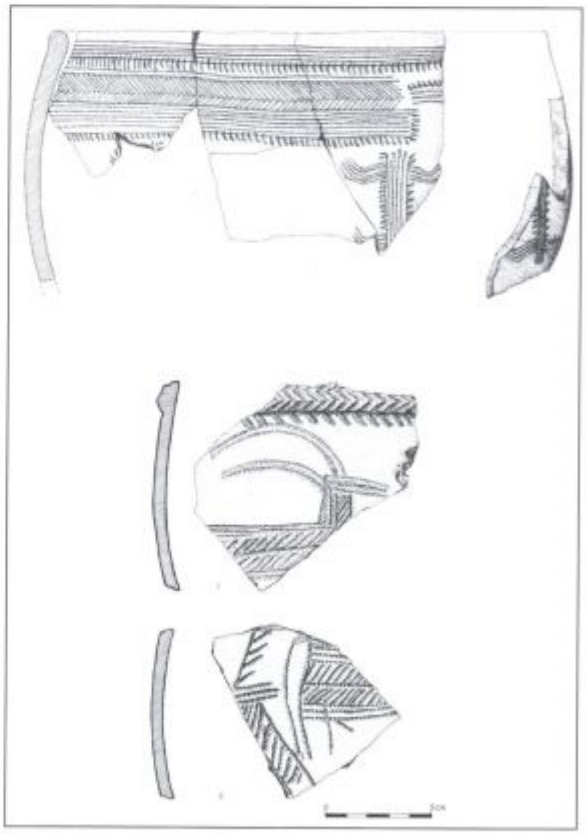

Fig. 2. Ceramic sherds from the Or cave (Alicante) showing a clear relationship with the top/bottom Schematic (up) and Levantine Rock Art styles (down).

The stratigraphy of Cendres Cave (Alicante) exemplifies this evolution. The stratigraphy of this site shows the evolution of pottery decoration from the very beginning of the Neolithic to the Bronze Age. The radiocarbon dates obtained there range through the Holocene layers from 6800 bp to 3800 bp (Fig. 3). Here the first stages of cardial decoration stand out, but they are not alone. Other types of decoration (other impressed, incised, and painted and reliefs) are present from the beginning. We can find this *Cardial* Phase scattered all over the region, but with different starting points: from ca. 6800 bp in Southern France-Catalonia to ca. 6500 bp in southern Portugal.

Between 6400-6200 bp, the non-cardial impressed and incised decorations become more common. The neolithisation of inner peninsular regions, from western Andalusia to north of the Meseta, would have taken place in this period - which is known as the *Epicardial* - as recent findings show (*Kunst and Rojo 1999; Estremera Portela 1999*).

Thenceforward, evolution seems to show a higher regional variability. In some places, *Epicardial* decorations ended at around 5600 bp, and a new style, with plain, black burnished ware, sometimes decorated with carved incisions, emerges. This is the case of the Chassey Culture in France, the early Fosa Graves Culture in Northern Catalonia, and Neolithic IIA in the Valencia region.

The Andalusian region, the central Meseta, and possibly Portugal, seem to continue the same *Epicardial* tradition until around 5000 bp, but show a high degree of variability between them.

Considering the above, I suggest the following phases (chronology is approximate):

- *Cardial*. 6800-6300 bp. *Cardial* decoration and reliefs predominate, their values rising up to 75-90 % of all decorated pottery. Technically, impressions made with a gradine are found quite close to cardial impressions, and sometimes it is difficult to distinguish one from the other.

- Early *Epicardial*. ca. 6300-5800 bp. Incised and impressed non-cardial decorations become more common and are often mixed on the same vase. These combinations include neither gradine nor cardial impressions; this latter technique decreases quickly and disappears from the pottery repertoire before 6000 bp.

- Late *Epicardial*. 5800-5000 bp. It is present in Andalusia and the inner peninsular regions. Decorations are rare and still within the *epicardial* tradition.

- Post-Impresso. 5800-5000 bp. They are only present in those coastal regions where the cardial phase was important. New techniques emerge, e.g. that of a carved style, while incisions and impressions tend to disappear.

'*Cardial*' and '*Epicardial*' do not denote ceramic styles, but refer to a series of decorative techniques

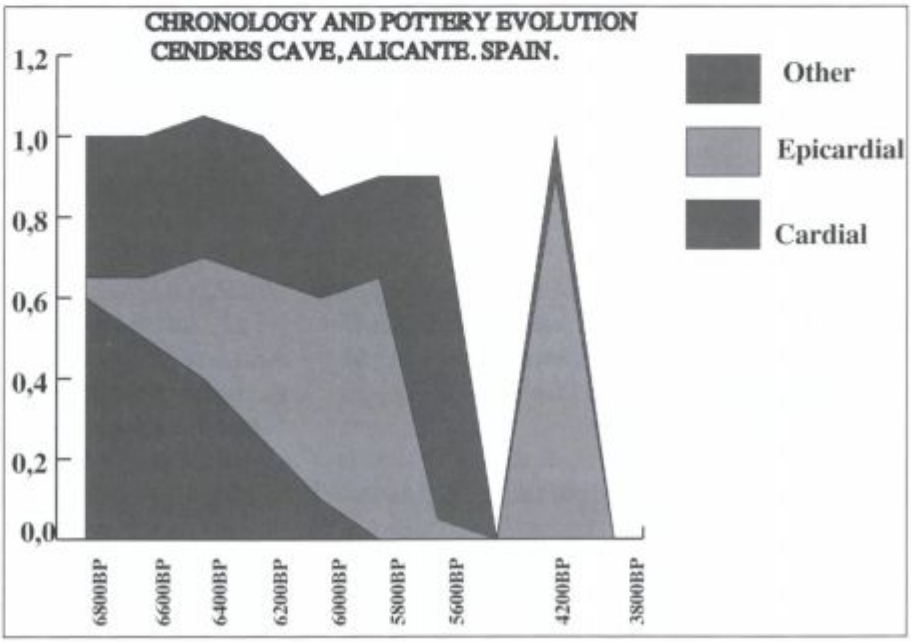

Fig. 3. Chronology and pottery evolution (decorative techniques) between ca. 6800-3800 bp. Cendres cave (Alicante).

which appear associated in space and time. Within them, the cardial phase is a much more uniform group, with rare regional variability.

2. ORIGINS

Considering the chronological gradation from East to West, as well as the absence throughout Europe of most of the wild types on which farming is based (mainly wheat and ovicaprines), the diffusionist thesis is broadly accepted nowadays, and the main debate on the origin of food production focuses on the role played by movements of people and the response of Mesolithic groups. Despite the risk of being too simplistic, one can say that the different points of view have arrived at a confrontation between what I call migrationists (*e.g. Zilhão 1993*) and indigenists (*e.g. Vicent 1998*). From my point of view, both types of models, indigenist and migrationist, are not only compatible, but in fact complementary. The dual model proposal focuses precisely on this aspect.

2.1. Theoretical framework

The **dual model** assumes that the neolithisation process was the result of combining some kind of demic expansion (farming colonisation) with the neolithisation of the Mesolithic substratum in different ways. On this basis, one may predict the existence of three different processes of neolithisation.

- **Colonisation**, the result of the expansion and occupation of new lands by farming groups. This expansion was CONTINUAL in time, but limited by diverse conditions:
  - ecological (adaptability to new environments)
  - or social (increasing circumscription)

and NON-RANDOM, guided by the availability of better resources, those which help reduce risks arising from dependence on farming.

From a historical point of view, there are two proposals that try to explain this spreading process: the Advancing Front model (*Ammerman and Cavalli-Sforza 1984*) and that of Maritime Pioneer Colonisation (*Zilhão 1993; 1997*).

As other researchers have pointed out (*Dennell 1985*), given the low demographic density which is assumed to be associated with early farming settlers, it is likely that the movement of farming expansion was accompanied by an assimilation process, which implies the disappearance of Mesolithic groups and their traditions, but not their genes, when women, as wives, join the expanding farming groups. From a purely logical perspective, we can also admit an assimilation contrary to that in the paragraph above: Mesolithic groups come to assimilate newcomers, becoming both farmers and stockbreeders (*Zilhão 1997*). From a migrationist perspective, assimilation tends to be presented as the most likely result of the interaction between farmers and hunters (*Zilhão 1993; 1997*). Although logically it is a result of the interaction between Farmers and Hunters, I consider assimilation together with colonisation, because their archaeological results are more or less the same.

- **Direct Neolithisation.** In the agricultural borderland, the interaction processes between farmers and hunters-gatherers will lead to the neolithisation of the latter. Regardless of their inner peculiarities, the importance of this interaction process lies in the fact that it will probably act as a filter, selecting information which will be disseminated among Mesolithic groups beyond the border.

- **Indirect Neolithisation.** The spread of Neolithic techniques and economy through social networks within Mesolithic groups. This process develops beyond the agricultural border, and may be considered as a derivation of the previous one.

Both processes begin after the agricultural border is established, which means that Mesolithic groups stay in their territories with a great part of their traditions. In this case, the spread of agriculture, of farming systems, was the result of adapting, by Mesolithic groups and through their own social networks, new technological and economic innovations introduced by expanding Neolithic groups. We can assume acculturation as a process through which farming and herding come to change the economic foundations of hunting and gathering systems of the Late Mesolithic. The result of such interaction would not have been the marginalisation of the Mesolithic groups, but increasing territorialisation between them and the Neolithic groups. Two worlds, two social and economic systems, each with its own traditions, would coexist for a longer or shorter period. Although the border between them could be permeable, from the described circumstances some given expressions of material culture can be understood as territorial markers. These is because the interaction process between Hunters and Farmers promote a competitive territorial behaviour and in these

circumstances both, techniques and styles of material culture (lithics and ceramics) will have a strong territorial pattern that could be related with subsistence and settlement pattern.

Undoubtedly, the idea that some elements of the material culture could be understood as signs of social boundaries is controversial (*see Stark 1998*). I do not aim to discuss the general validity of this assumption now; I only note that, given the particular conditions under which farming expanded, one may expect patterns of spatial distribution of certain material items might be understood as territorial signs.

From a historical or anthropological point of view, several models can be advanced to explain how the neolithisation process developed. In the Iberian Peninsula and, on a wider front, in the Western Mediterranean, the Capillarity model (*Vicent 1997*), which assumes and revises some aspects of the Filter model (*Lewthwaite 1986*), seems to be a reasonable alternative to processes defined as Indirect Neolithisation.

The availability model, in its most recent formulations (*Zvelebil 1996*), seems more suitable for explaining those processes defined as Direct Neolithisation.

2.2. Empirical Implications

Assuming the premises above implies assuming a certain regional variability and, consequently, developing the empirical implications which are necessary to contrast them. Most of the arguments used to evaluate the migrationist hypothesis are based on anthropological or DNA analyses, the results of which, however, are not without problems. The debate on the Portuguese case is highly illustrative (*Zilhão 1997; Lubell et al. 1994; Jackes et al. 1997*).

I do not share the pessimism of those who assume that the archaeological record is unable to decide properly between the suppositions above (*Cavalli-Sforza 1996.52*). The migrationist hypothesis is sound enough to assume that, given these conditions, the archaeological record would remain stable. The settlement of farmers in a new area must be visible through archaeological variables such as the technology and style of material culture, or subsistence and settlement patterns.

The **dual model** provides a definition of the record which should be expected in a hypothetical area where an interaction between Neolithic farming groups and the remaining Late Mesolithic cultures occurs. Given that the spread of the Neolithic involved the joint dissemination of technical (pottery) and economic (domesticated) features, first I use the emergence of pottery as the turning point for dividing the archaeological record into three phases.

Phase 0

This includes the phases immediately prior to the emergence of pottery. Subsistence, technology and settlement will define a system (pre-ceramic Mesolithic) which will be taken as a point of reference when comparing these three factors with those in phase 1.

Phase 1

When the first pottery appears, we must find two groups of settlements showing:

a) a different territorial pattern;
b) a different subsistence system, measured as the level of dependency on domesticated plants and animals;
c) a different technological system. To approach this variable, I will use some technical and stylistic characteristics of the lithic industry, as these are the only comparable aspects in all these archaeological groups.

One of these could be related to the pre-ceramic Mesolithic: people settled the same sites in nearly the same regions as earlier, in pre-ceramic times; their subsistence was based on wild resources, and lithic technology and styles could be related to the former. This is the CERAMIC MESOLITHIC.

On the other hand, the other group will show a preference for settling new sites, in regions different from earlier ones; their subsistence is based on a mixed arable/pastoral system; and finally, technology will show a break-off in relation to pre-ceramic sites. This is the NEOLITHIC COMPLEX. The length of this Phase 1 will be variable.

Phase 2

This occurs when the dual subsistence pattern such as that described in phase 1 can no longer be distinguished. If Mesolithic groups finally become "neolithicized", in phase 2 we should expect to find the distinctive traits of their cultural tradition. That is, if assimilation was not the only result of the interaction processes between farmers and hunters, then we expect to find a territorial pattern very similar to that described earlier, but affecting only some cultural traits.

3. TESTING THE MODEL: GROUPS AND TERRITORIES IN MEDITERRANEAN SPAIN

Using the variables of lithic technology and subsistence economy (domestic resources) in a combined PCA-Cluster analysis, the layers of the most familiar sites in Mediterranean Spain have been divided into five groups (*Bernabeu 1996; 1997*). Technological and economic traits, as well as the radiocarbon dates of these groups, suggest a good correlation with the implications of the Dual Model (Fig. 4).

- Groups 1 to 4 represent the Mesolithic Complex from pre-ceramic times (G1 ca. 7600- 7100 bp) to the Late *Epicardial* period (G.4, ca. 5800-5200 bp). The technological linkage between all these groups can be reflected in the technology and style of geometric tools. Hence I call it the Geometric Complex.

G1 and G2 represent the Pre-ceramic Phase. The main features of their geometric tools are their trapezoidal (G1) and triangular (G2) shapes, with abrupt retouch and concave sides, using the microburin technique (Fig. 5).

G3 represents the so-called Ceramic Mesolithic (Fig. 6), with no domestic resources, and a starting point of around 6400 bp (radiocarbon dates are inconclusive). It includes both the *Cardial* and Early *Epicardial* Phases. This ceramic Mesolithic could probably be earlier in the agricultural border, in relation to group 2, as the assemblages and dates of Forcas 2 (*Utrilla and Mazo 1994*) and Can Ballester (*Gusi and Olaria 1991*) seem to show.

Finally, G4 represents the Late *Epicardial* Phase. Its lithics are characterised by lunates with hellwan retouch (Fig. 6) and its subsistence system is based on domesticates.

- Group 5 represents the Neolithic Complex, ranging from ca. 6800-5000 bp and including all pottery styles (*Cardial*, *Epicardial* and Plain wares). From the beginning, its subsistence economy is based on domestic resources, and its lithic technology and typology (Fig. 7) show a break-off with regard to the Mesolithic Complex. I consider this Neolithic Complex the result of agrarian colonisation.

Both complexes show a clear territorial pattern, the limits of which, furthermore, can be traced through ceramic decorations. Figure 8a-c shows how settlements were distributed within the analysed area during phases 0 and 1 in the model.

During phase 0, the only existing settlements belong to the pre-ceramic phase of the Geometric Complex. Of course, there are no domestic resources and no pottery. Group 1 and at least part of group 2 can be included here.

During model phase 1 (ca. 6800-5800 bp) two territories are clearly distinguished:

- one is occupied by group 5, belonging to the Neolithic Complex. Most of the cardial pottery of the whole area is concentrated in this territory (Fig. 9).

- the other territory, occupied by groups 2-3, dates to the ceramic phases of the Mesolithic Complex. *Cardial* pottery is rare (even non-existent), the *epicardial* decoration, particularly incised and impressed decorations which are mixed in the same vase, being a characteristic of this territory (Fig.10).

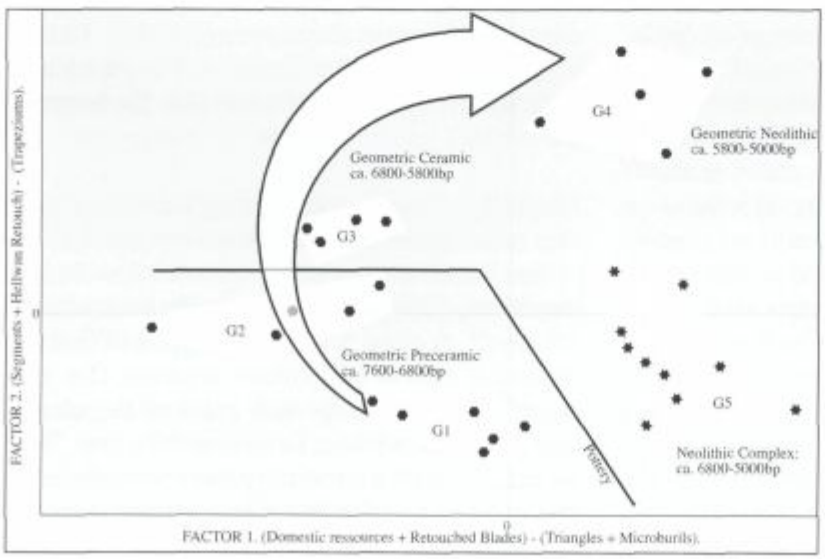

Fig. 4. Results of the PCA analysis.
Dots represent sites and layers belonging to the Geometric Complex. Stars represent sites and layers belonging to the Neolithic Complex. The line represents the rise of pottery, leaving on the left all pre-ceramic sites. Arrowheads represent time: thus, Groups 1 to 4 are successive, and Group 5 is contemporaneous with Groups 3-4 (see text for explanations).

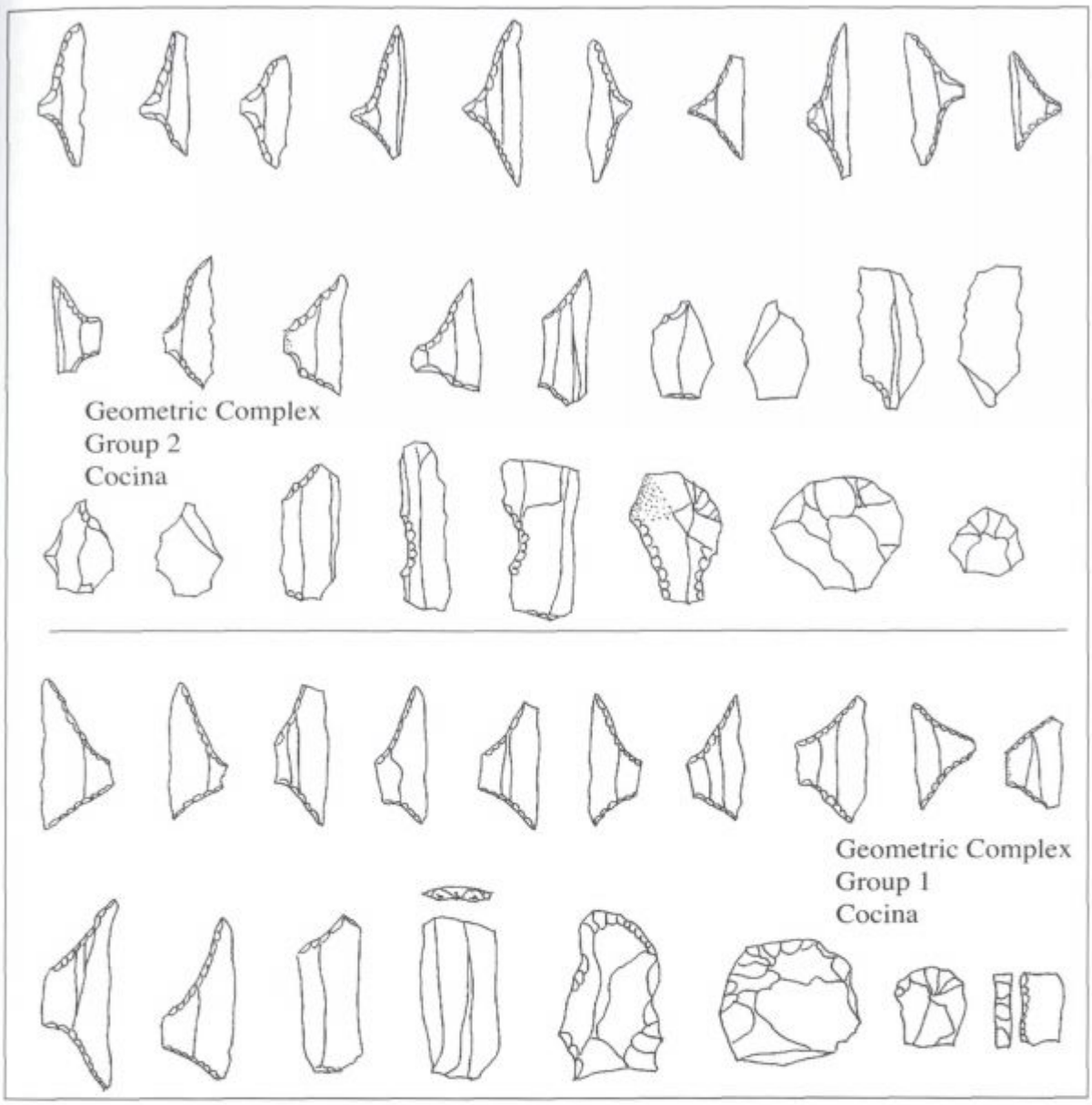

Fig. 5. Lithics of Groups 1–2. Geometric Complex. Pre-ceramic phases (the Cocina cave, Valencia).

In phase 2 (ca 5800–5000 bp) all settlements show a subsistence systems based on domestic means. This, however, does not change the spatial variability already observed, which matches exactly the pattern in phase 1.

- The Neolithic territory, still occupied by Group 5-related settlements. Now, ceramics decorative styles already belong to the horizon of post-impressed ware, with a predominance of carved decorations and simpler motifs and styles (Fig.11).

- On the other hand, the territory belonging to the Geometric Complex is now occupied by Group 4 settlements. Their subsistence already rests on domestic resources; but their pottery shows an original decorative system (Fig. 12). This is the Late *Epicardial* Phase.

4. THE SYMBOLIC DIMENSIONS OF THE NEOLITHISATION PROCESS

In conclusion, both the territorial behaviour of groups, as determined by multivariable analysis, and their subsistence and cultural features demonstrate the basic assumptions of the dual model, i.e. neolithisation was a mixed result of

4.1 The expansion of farming, through colonisation *(Neolithic Complex)*

The territorial component of this colonisation was limited, and its demographic power was seemingly

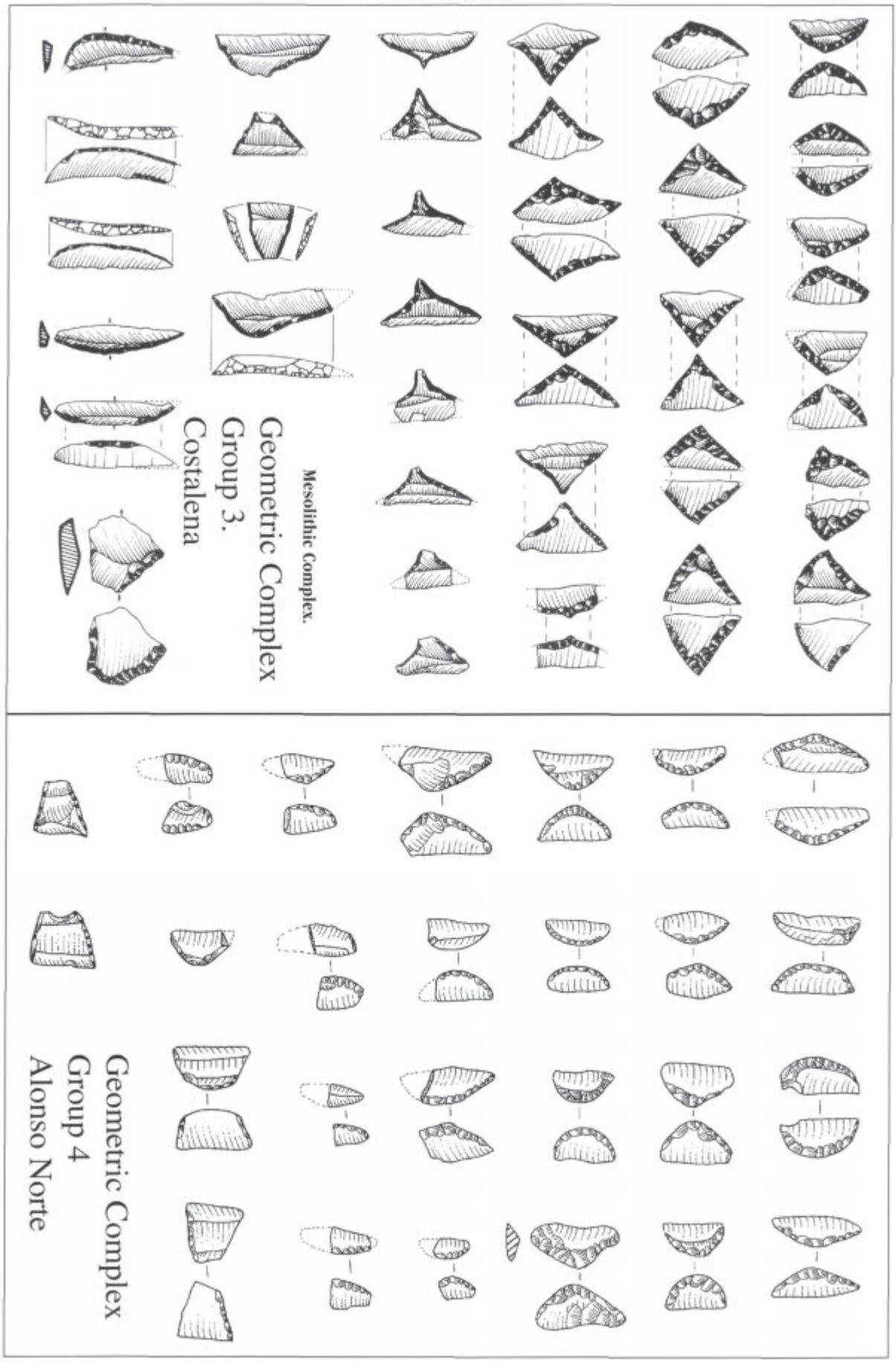

Fig. 6. Lithics of G3 (Costalena cave, Teruel) and G4 (Alonso Norte, Teruel).

poor. Only the coastal valleys of the River Llobregat, in the north, and of the River Serpis, in the south, have some significance. In the inner regions, only one settlement (the Chaves cave, in Huesca) can be related to this movement. Throughout the remainder of the Iberian Peninsula, only the sites in the Granada group (*Navarrete 1976; Bernabeu 1986*) and those at the Portuguese coast (*Zilhão 1993; 1997*) can be related to cardial expansion. The absolute dates available (Fig. 13) prove that it was a rapid movement, which reached northern Portugal in about 500 years. This situation seems to fulfil the

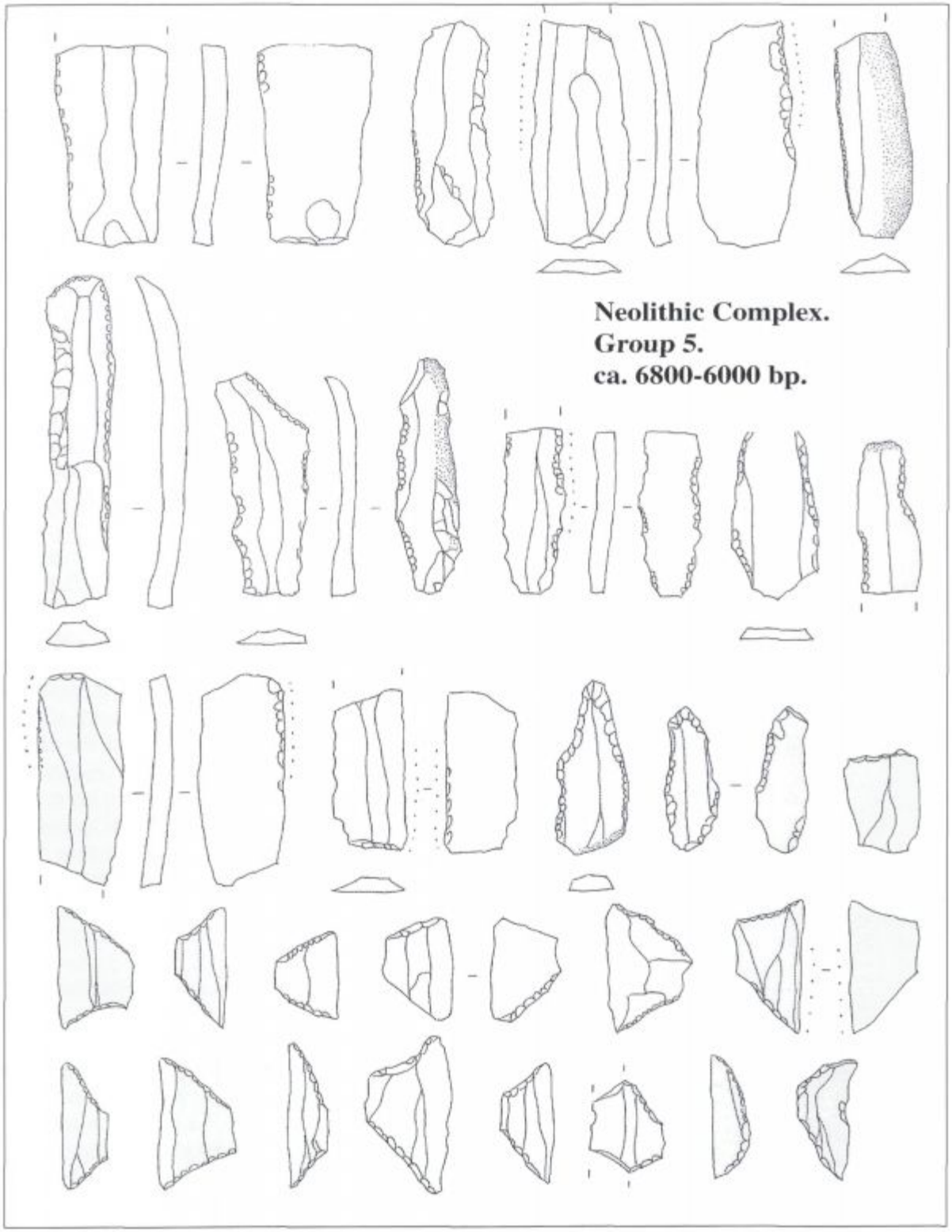

Fig. 7. Lithics of Group 5. Neolithic Complex. Or cave (Alicante).

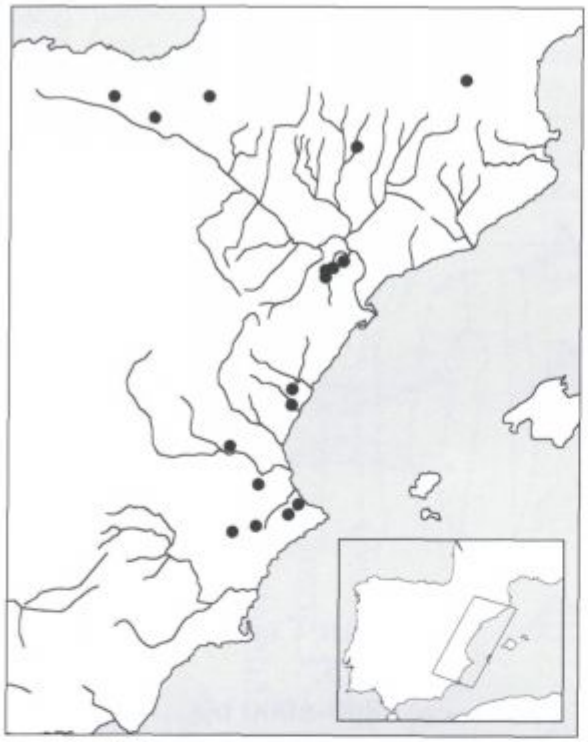

Fig. 8a. Spatial distribution of Pre-ceramic Mesolithic (Model Phase 0). Geometric Complex; group 1; preceramic; 7600–7100 bp.

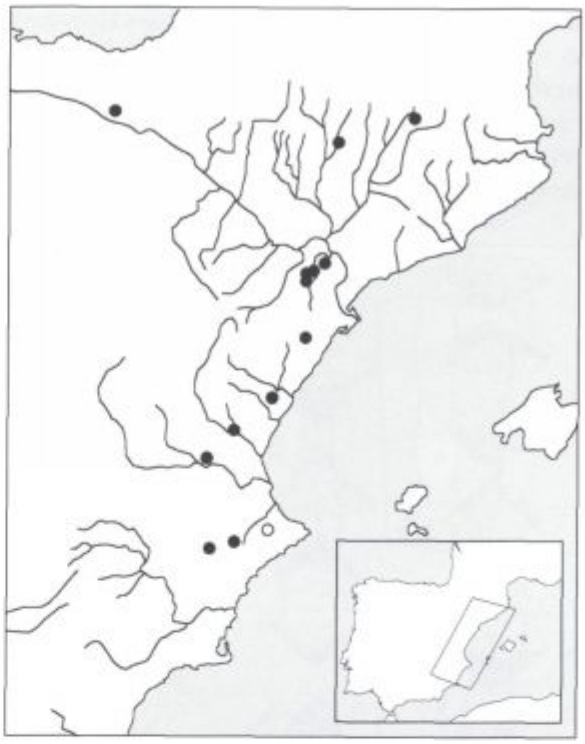

Fig. 8b. Spatial distribution of Ceramic Mesolithic (Cardial and Ancient Epicardial; Model Phase 1). Geometric Complex; groups 2–3; Cardial and Early Epicardial; 6800–5800 bp.

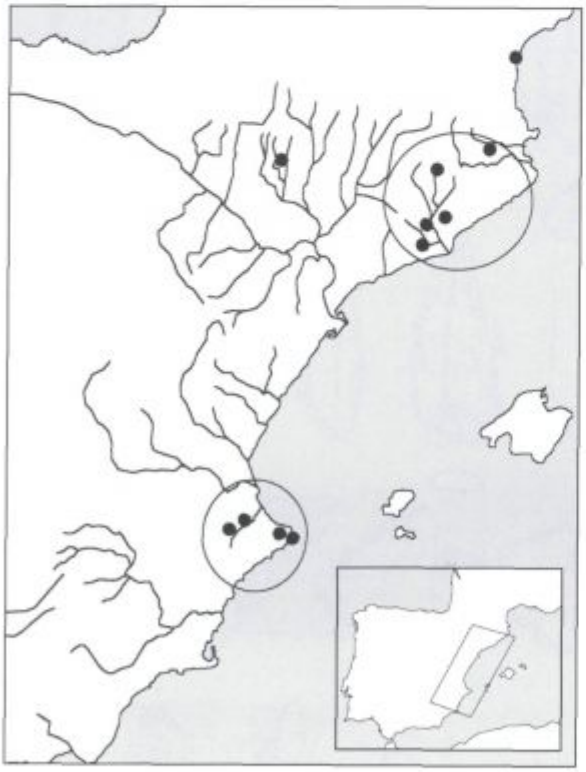

Fig. 8c. Spatial distribution of Neolithic Complex (Cardial and Early Epicardial; Model Phase 1). Circles show the Llobregat (north) and Serpis valleys (south), the two regions with a higher concentration of cardial sites. Neolithic Complex; group 5; Cardial and Early Epicardial; 6800–5800 bp.

expectations of the maritime colonisation model (*Zilhão 1993; 1997*) better than the model of the Advancing Front. Such a fast process can not be explained on the basis of a progression of 1 km per year, although the process developed a little faster along the margins of dissemination (as happened in the Iberian Peninsula), as was recently noted (*Cavalli-Sforza 1996*). On the other hand, a simulation study based on modern genetic data (*Calafell and Bertranpetit 1993*) indicates that if the interpretation of the second Principal Component as a consequence of Neolithic expansion is correct, then its simulated distribution did not correlate well with actual gene frequencies, as has been pointed by Zilhão (*1997.20*).

There are two important questions to be answered:

1. What is the reason for this rapid movement? Given the demographic potential of these Neolithic groups and the availability of natural resources, it is unlikely that this movement could be explained by economics. It is beyond the scope of the present paper to explore this topic in depth, but I think the main reason must be sought in some social imperatives: e.g. as a reaction against social circumscription and the concentration of power. Of course, it is a

highly speculative hypothesis, which needs considerable additional support; however, what is important is to retain the idea that it is such a situation which could explain the forces behind the Martime Pioneer Colonisation model.

2. Why is it associated with decorated pottery? One of the most striking features in this process may be its association with impressed pottery. The most likely reason must lie in the fact that these ceramics are a basic element in the social network of these groups. Acting either as a vehicle or a symbol of this network, decorated pottery spread together with domesticated resources, lending the entire territory of early neolithisation an aspect of cultural homogeneity. *Cardial* decorations and, particularly, symbolic styles are its most outstanding signs, shaping a symbolic system belonging to the *Cardial* Territory. Figure 14 shows various representations of one of these motifs, the so called M or W sign, which, in different forms, can be found throughout this territory.

4.2 The neolithisation of the substratum *(Geometric Complex)*

Analysis has shown that pre-existent Mesolithic groups adopted Neolithic technology (ceramics) first, and then they adopted domestic resources. Although the chronology of the process is still inaccurate, we can definitely state that:

a. Assimilation played a limited role. Actually, considering that assimilation developed very rapidly (*Dennell 1985*), it could not be a very visible process in the archaeological record.

Considering the available data, an assimilation process in the peninsular Mediterranean could only have developed around the region of the River Serpis, the only area which is occupied by group 1 sites (preceramic Mesolithic). Once early ceramics emerge, sequences in the sites in the littoral and pre-littoral areas cease, and thus the subsequent evolution of the Geometric Complex is visible only in the inner regions. Unless the interruption of these sequences derives from an actual gap, which implies that preceramic Mesolithic groups abandoned the coastal region, this is the most acceptable explanation.

b. Thenceforth, once the border was fixed, interaction between both groups eventually results in the neolithisation of the Mesolithic Complex. Ironically, the reason lies in the threat of assimilation. The important question about assimilation was not whether it would eventually happen, but rather the obvious,

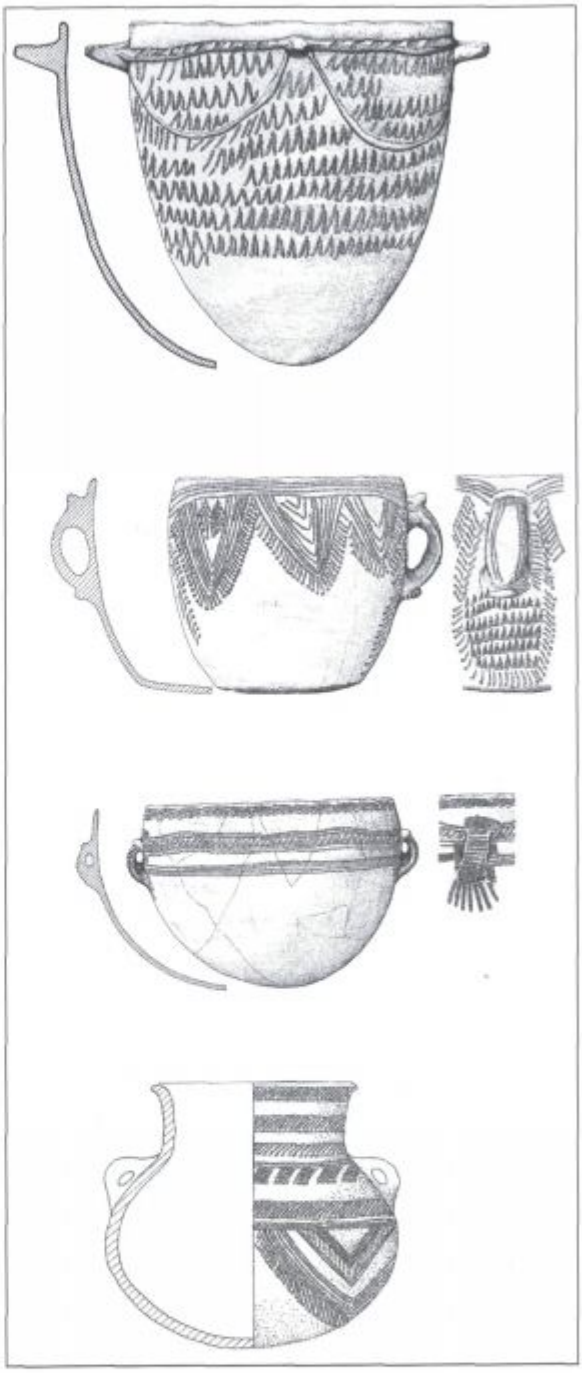

Fig. 9. Cardial and Gradine decorations from the Neolithic Complex, Group 5. (Or cave). Cardial Phase.

dangerous possibility that it could actually happen, which would definitely imply the disappearance of the assimilated group (in this case, the Mesolithic group). This possibility could only be faced if the response of the Mesolithic group included an imitation of some practise of the Neolithic groups, e.g. adopting domesticated resources and, consequently, transforming the mode of production. This decision, however, means a highly dramatic change in the life-style and subsistence of Mesolithic groups in the

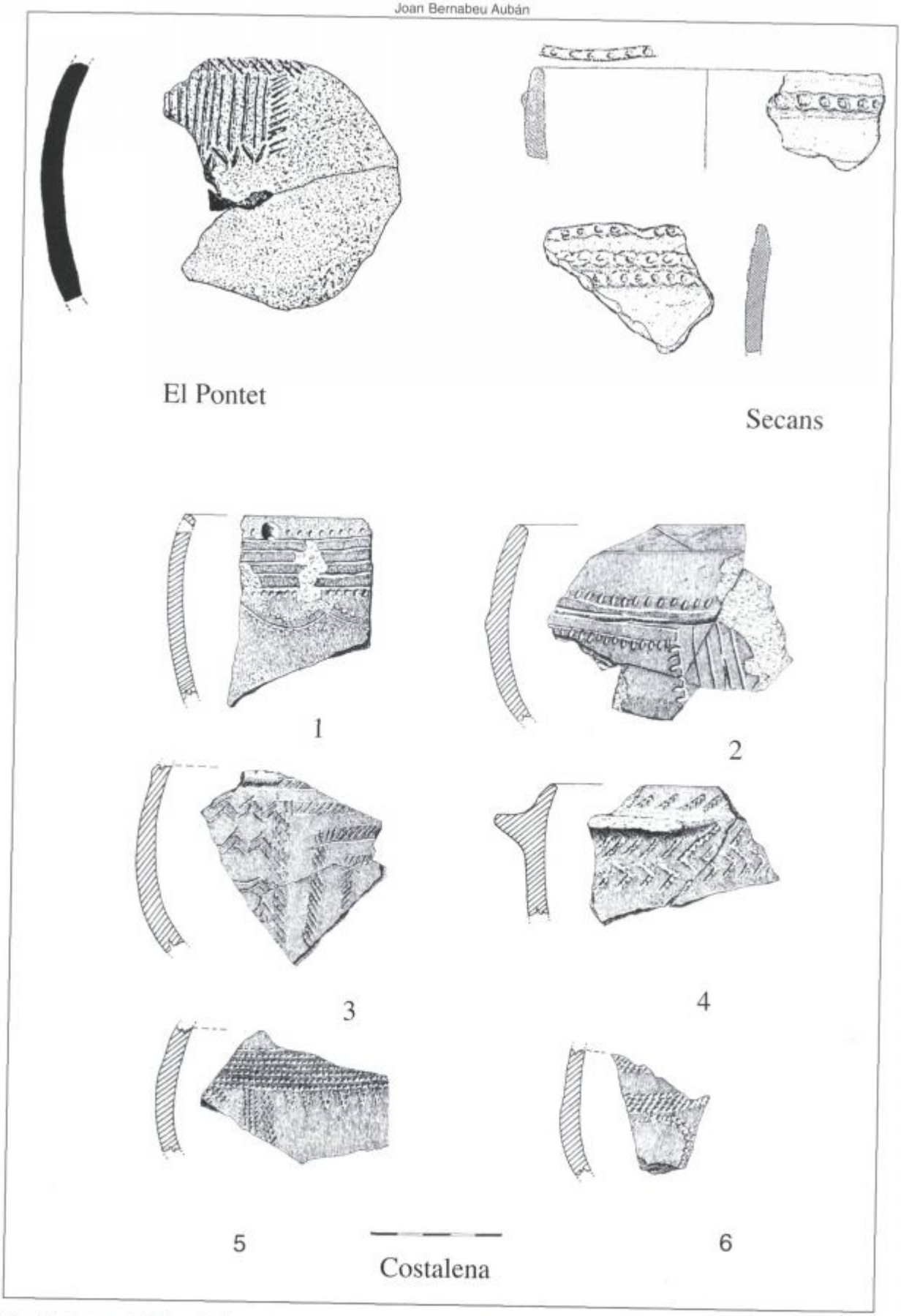

Fig. 10. Decorated sherds from Geometric ceramic sites. Cardial and Early Epicardial phases. Cardial (Costalena cave 1). Gradine (Costalena cave 3, 5, 6). Incised and impressed (Costalena cave 1, 2; El Pontet). Reliefs (Secans).

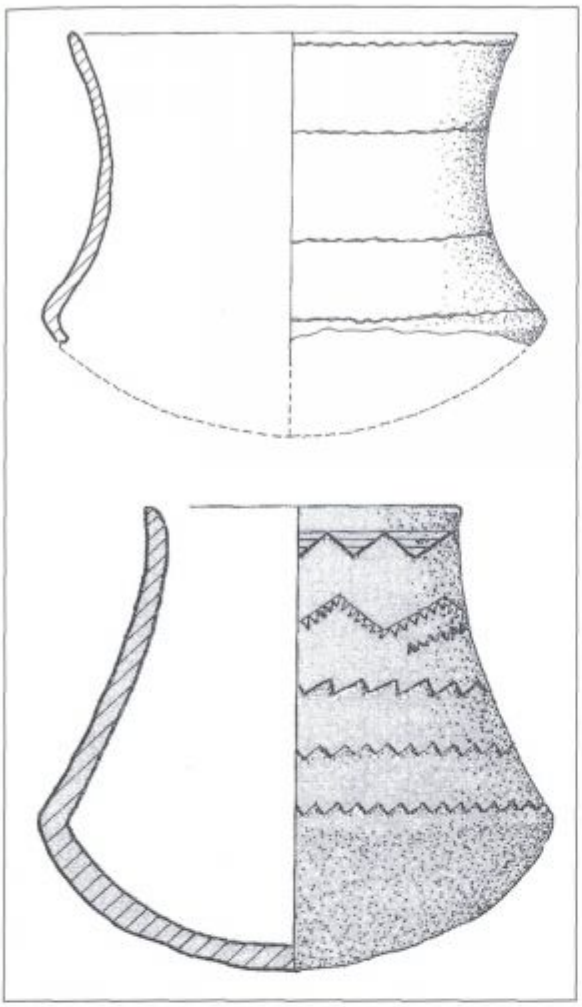

Fig. 11. Carved decorations of the Post-impresso phase. Neolithic Complex, Group 5. En Pardo Cave (up) and Ampla Cave (down), Alicante.

Spanish Mediterranean, one of whose main characteristics is the important residential mobility of their foraging system, the deferred use of resources being unverified (*Aura and Pérez Ripoll 1995*).

Consequently, it seems difficult to assume that actions aimed at modifying subsistence systems, if they appear, are selected in the beginning. It is more likely that those decisions are taken (or eventually certain practises are chosen) which tend to preserve, apparently at least, traditional life styles. The above analysis suggests that this was what happened, and so domestic resources would have been adopted about 800 years later, while other techniques, e.g. ceramics, would have been accepted earlier.

Contacts between groups could possibly have been co-operative at first, as Zvelebil suggests (*1996*), but they had to be competitive earlier rather than later. The opportunist use of land, the free access to sources of raw materials and the unidirectional movement of women - from Mesolithic to Neolithic groups - (*Zvelebil 1996; Cavalli-Sforza 1996*) would make initial co-operation a threat to the long-term subsistence of Mesolithic groups. Consequently, we may reasonably suppose that competitive behaviours appear between these groups. On the other hand, this is the only possible response to the pressure of farmers, if one wants to avoid the threat of increasing marginalisation and/or assimilation. Assuming that, at first, this competitiveness does not affect the economic domain, one may expect it to influence the social and symbolic, promoting the development of prestige items as a means of avoiding disruptive tendencies. Decorated pottery could play this role. At a

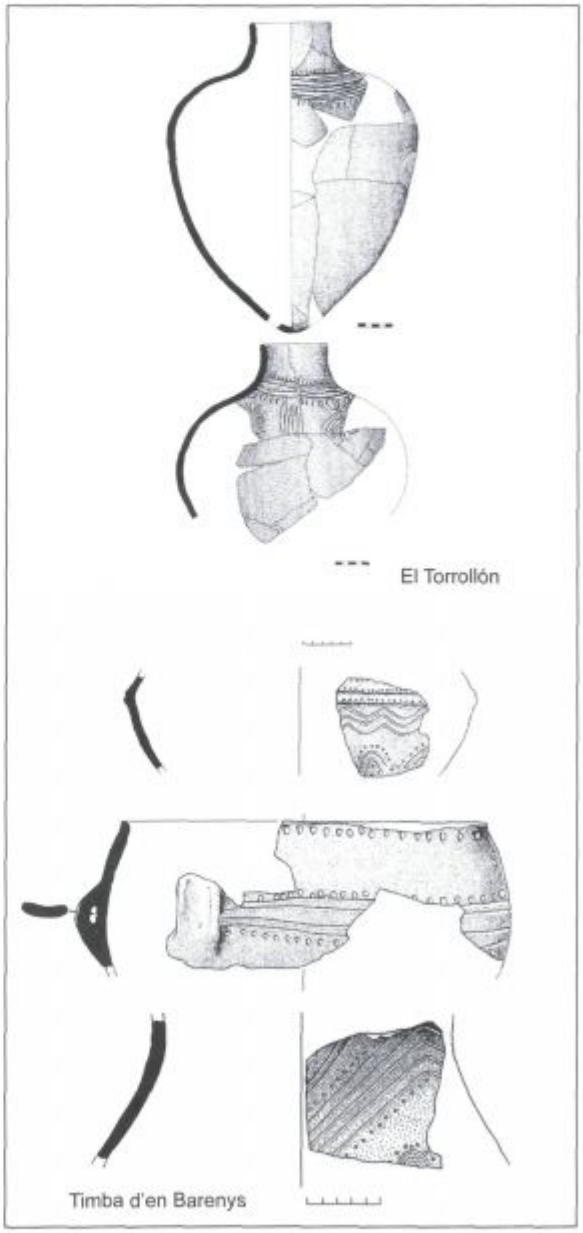

Fig. 12. Pottery decorations of the Late Epicardial Phase. Geometric Complex, Group 4.

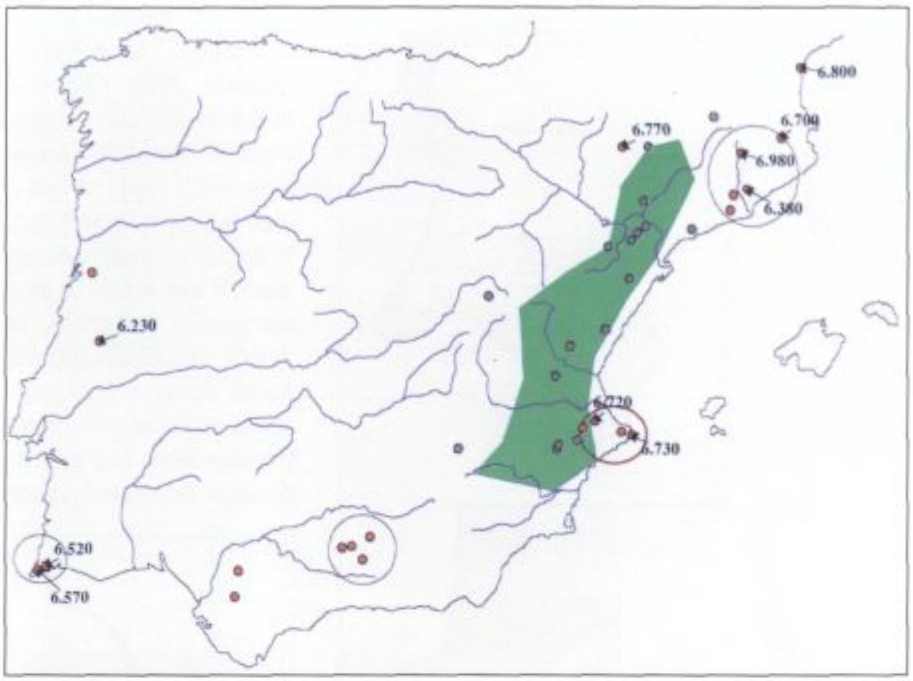

Fig. 13. The Cardial Territory in the Iberian Peninsula.
The circles show the cardial groups (the Cataluña-Llobregat group, Valencia-Serpis group, Granada-Carigüela group and Southern Portugal group). Red dots represent Neolithic Complex sites, with radiocarbon dates if available; grey dots represent Mesolithic ceramic sites; green area represents approximate dispersion of Levantine rock art shelters.
Most of the shelters with Macro-schematic Art are from the Serpis group (red circle). This is the only one region where a possible assimilation process could have happened at the time of first contact; thereafter, interaction between farmers and hunters – located at some distance – will result in the neolithization of the latter.

first stage, while the relationships between both groups are dominated by co-operation, cardial pottery flows from the Neolithic Complex to the Mesolithic. From this perspective, we may assume that its spatial variability will follow a declining pattern, starting in the Neolithic Complex centres where this pottery was made. It is not a progressive decline, and thus the reduction of cardial pottery inside the borders is dramatic. Actually, in lower Aragón, not far from the probable agricultural boundary, cardial pottery is usually rare in quantitative terms in the first layers where pottery appears, and sometimes does not appear at all, e.g. in the Secans shelter (*Rodanés et al. 1996*).

This is the most evident effect of the filter: cardial pottery and domestic resources do not pass into the hinterland. The reason for this is that people were exchanging objects only between Neolithic and Mesolithic groups at the farming border, and did not become incorporated into the production of Mesolithic groups' material culture. Interestingly enough, a petrologic analysis of pottery fragments from the Balma Margineda (Andorra) – a site which can be ascribed to the Geometric Complex – suggests that the only cardial vase found here was probably made outside the area (*Barnett 1995.197, 207*). Undoubtedly, if such a situation were common to all the sites of the Geometric Complex, it would lend considerable support to the hypothesis above.

Given the poor influence of cardial pottery within the Mesolithic Complex, we may assume that it was a rapid phase, although it is impossible to establish how long it lasted. In this phase, ceramics technology is disseminated, and decorative patterns show obvious similarities to those of the *Cardial* phase of the Neolithic Complex. From this moment on, and as ceramics became a part of the material production of these groups, decorative patterns tended to be different. This is because pottery within the Mesolithic groups played a role similar to that of pottery in the Neolithic groups, namely, it became the bearer of certain codes and symbols expressed through decoration and conferred, among other things, individual prestige or status and social cohesion.

An analysis of the spatial variability of decorative motifs and styles similar to those carried out in other regions (*Barnett 1990; Malone 1985*) would show that this pottery is associated with the territories belonging to the Mesolithic and Neolithic Complexes mentioned above, within which there would have been differing exchange and information networks. The information available suggests, indeed, that the decorative patterns of ceramics associated with the Mesolithic Complex tended to diversify very quickly during the Early *Epicardial*. The Late *Epicardial* Phase is the most outstanding example of this phenomenon. The differences between the style and designs of this pottery are self-evident

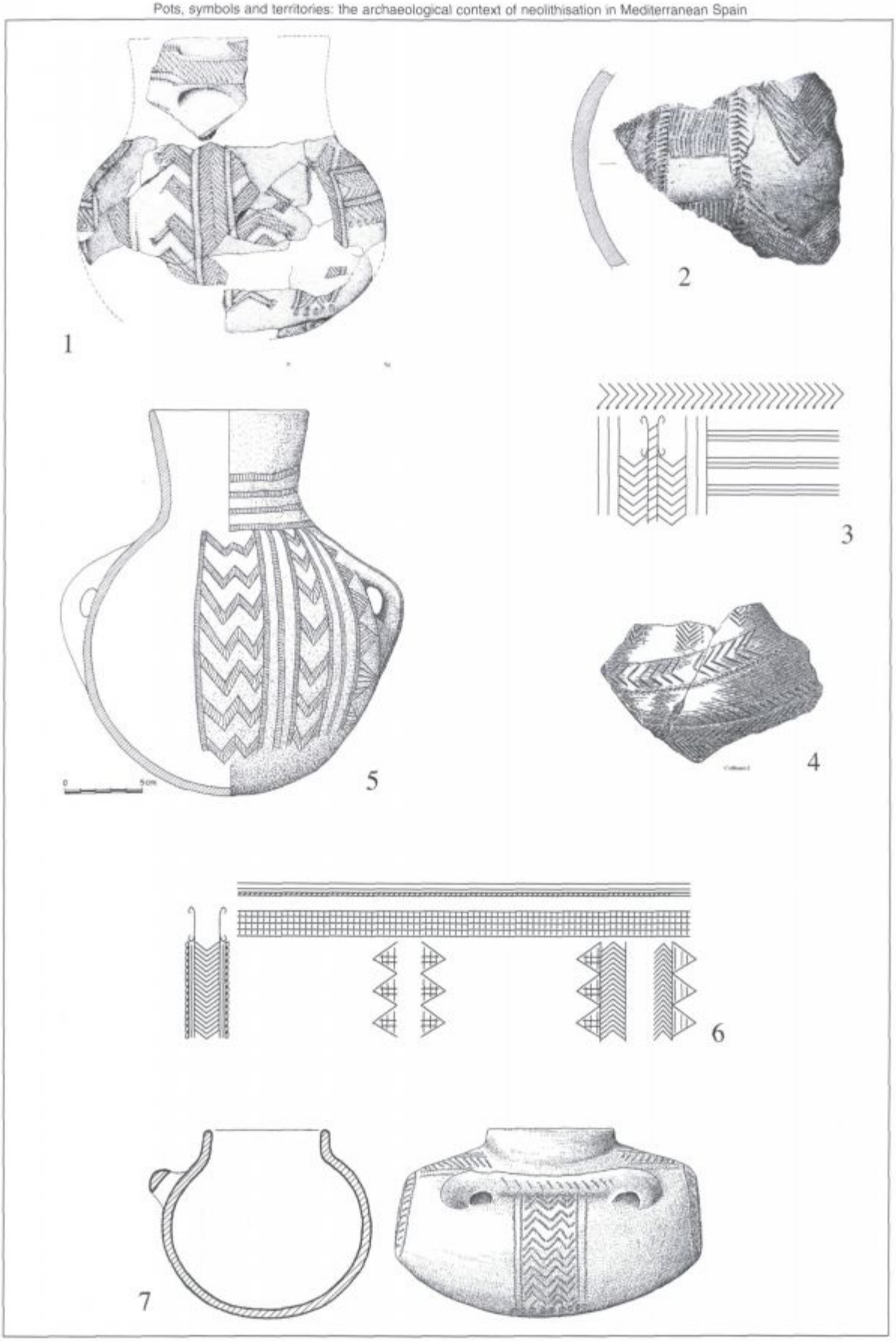

Fig. 14. Symbolic pottery of the Neolithic Complex. Collbató Cave, Barcelona (4); Or cave, Alicante (1, 7); the Ventana cave (2); the Cariguela cave, Granada, (drawn from original photographs) (3, 6); the Niño cave, Albacete (5). Cardial decoration (1, 2, 3, 4, 7); Gradine decoration (5); incised and impressed decoration (6).

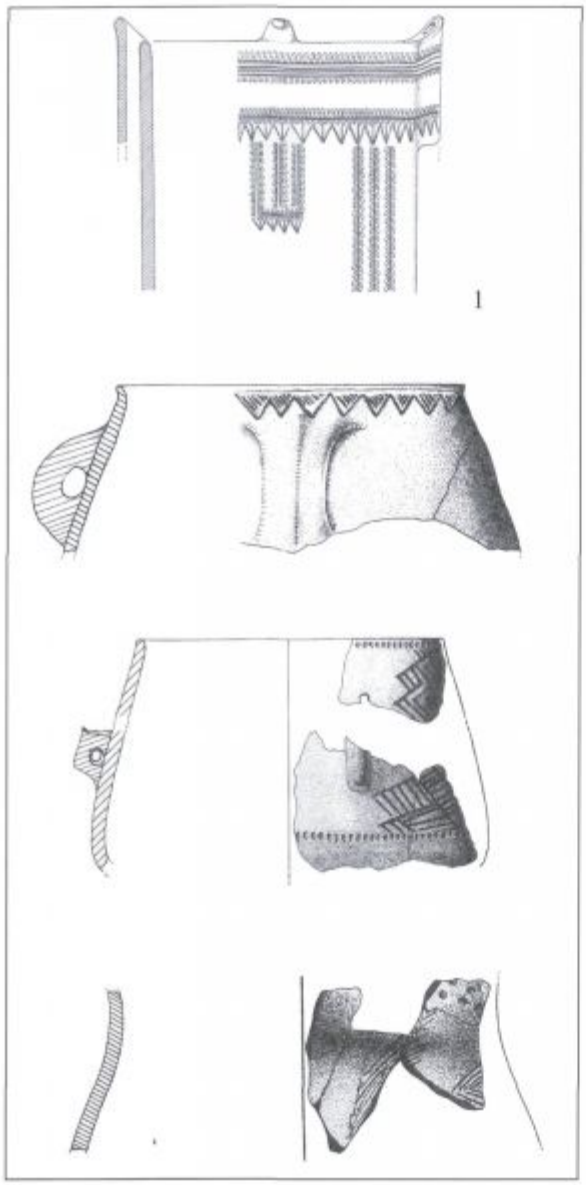

Fig. 15.* Epicardial *decorations. Neolithic Complex, Group 5. Or cave (1) and Cendres cave (all the others). Early* Epicardial *Phase.

when compared with those common in the Neolithic complex during the Early *Epicardial* (Fig.15). This is why the geometric territory appears, in its ceramic phases, as an area where the development of the *Epicardial* reaches its highest level (*Van Willingen 1999; Mestres 1991*). The extraordinary development of Levantine rock art may be better understood within this context. As other researchers have suggested, Levantine art seems to be the symbolic referent of a changing world, the world of the ceramic phases of the geometric complex (*Hernández and Martí 1994*).

I will not analyse the meaning of these symbolic referents in depth, but it is worth noting that the Neolithic symbolism focuses on the human figure, with representations which are deprived of individual attributes, in a non-naturalistic style, and with a certain aversion to descriptive content. The Levantine art, however, is naturalistic and scenic; it is interested in human figures, but also includes animals, which are often depicted as part of the same scenes. We should not forget, however, that the Levantine art in its origins is closely related to the Macro-schematic, which is presented as the symbolism of the cardial territory and, consequently, of the Neolithic Complex, by ceramic parallels. There are four outstanding points in this discussion:

1. Schematic styles are older. Both the ceramic sequence in Cova de l'Or, and the chromatic superimpositions seem to suggest this.

Fig. 16. Levantine scene superimposed on a symbolic motif close to the M symbols of figure 14 (compare with vase number 1). Los Chaparros (Teruel).

2. The Levantine style shows a higher spatial correlation with Mesolithic territory (Fig. 13).

3. Some macro-schematic representations are found in shelters within the geometric territory or within its limits.

4. The Levantine style, when it is found in the same shelter, is placed on top of the macro-schematic (Fig. 16), which seems to happen only within the limits of both territories, geometric and cardial.

Interestingly enough, developments in rock art seem to be very similar to those described for ceramic decorations: after an imitation phase, where some patterns deriving from Neolithic symbolism are found, another phase follows, where an original style develops (the Levantine style), which is seemingly interested in eliminating the previous symbolic referent (super-impositions) and is located outside rocky shelters, in open places, which seems to be a way of sign-posting the territory (*Bradley 1997*). Does this situation result from the emergence of competitive behaviours within the geometric groups, as a way of facing the risk of assimilation, as occurs in ceramics? I suggest that in both cases, pottery and rock art, the original symbolism which is associated with the Mesolithic world in its ceramic phases is a response to the threat of assimilation or marginalisation. This response, in turn, is a way of resisting economic change and limiting transformations to the ideological domain. A similar understanding has been suggested for other European regions (*Whittle 1998*), which seems to show a historical scenario with differences, but also with some common characteristics. All these symbolic phenomena, on the other hand, are associated with a higher degree of territoriality and an increase in social identity, two features which bring the world of the Mesolithic foragers closer to that of the Neolithic farmers.

No doubt we must undertake an analysis of the various symbolic components which appear systematically associated within the context of neolithisation. The understanding of their inner structure and of their movement may help us evaluate the particular historical setting in which this process took place. My sole aim in this paper was to draw attention to the potential of this line of analysis which, necessarily, will have to be developed in the future.

∴

REFERENCES

AURA J. E. and PÉREZ RIPOLL M. 1995. El Holoceno incial en el Mediterráneo español (11 000–7000 bp). Características culturales y económicas. In V. Villaverde (ed.), *Los últimos cazadores. Transformaciones culturales y económicas durante el Tardiglaciar y el inicio del Holoceno en el ámbito mediterráneo: 119–146.*

AMMERMAN A. J. and CAVALLI-SFORZA L. L. 1984. *The Neolithic Transition and the Genetics of population in Europe*. Princeton.

BARNETT W. K. 1990. Small-scale transport of Early Neolithic pottery in the West Mediterranean. *Antiquity, 64: 859–863.*

1995. The petrographic analysis of Early Neolithic pottery from the Balma Margineda. In J. Guilaine (dir.), *Les excavacions a la Balma Margineda (1979–1991). Vol. III*. Andorra.

BERNABEU J. 1989. *La tradición cultural de las cerámicas impresas en la zona oriental de la Península Ibérica.* Trabajos Varios del Servicio de Investigación Prehistórica, 86. Valencia.

1997. Indigenism and migrationism. The neolithisation of the Iberian Peninsula. *Poročilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji, XXIV: 1–17.*

BRADLEY R. 1997. *Rock Art and the Prehistory of Atlantic Europe. Signing the land*. London.

DENNELL R. 1985. The hunter-gatherer/agricultural frontier in temperate Europe. In S. W. Green and S. M. Perlman (eds.), *The archaeology of frontiers and boundaries: 113–140.*

ESTREMERA PORTELA M. S. 1999. Sobre la trayectoria del Neolítico Interior. Precisiones a la secuencia de la cueva de La Vaquera (Torreiglesias, Segovia).

In *II Congrés del Neolític a la Península Ibèrica. Saguntum, Extra 2: 245.*

GUSI F. and OLARIA C. 1979. El yacimiento prehistórico de Can Ballester (Vall de Uxó, Castellón). *Cuadernos de Prehistoria y Arqueología Castellonense, 6: 39-96.*

HERNÁNDEZ M. and MARTÍ B. 1994. Art rupestre et processus de néolithisation sur la façade orientale de l'Espagne méditerranéenne. In J. Vaquer (ed.), *Le Néolithique du nord-ouest méditerranéen. Actes du XXIV Congrès Préhistorique de France: 257-266.*

JACKES M., LUBELL D. and MEIKLEJOHN C. 1997. Healthy but mortal: human biology and the first farmers of western Europe. *Antiquity, 71: 639-658.*

KUNST M. and ROJO GUERRA M. !!!!! El Valle de Ambrona: un ejemplo de la primera colonización neolítica de las tierras del interior peninsular. In *II Congrés del Neolític a la Península Ibèrica. Saguntum, Extra 2: 259-270.*

LUBELL D., JACKES M., SCHWARCZ H., KNYF M. and MEIKLEJOHN C. 1994. The Mesolithic-Neolithic transition in Portugal: Isotopic and dental evidence of diet. *Journal of Archaeological Science, 21: 201-206.*

MALONE C. 1985. Pots, prestige and ritual in Neolithic Southern Italy. In C. Malone and S. Stoddart (eds.), *Papers in Italian Archaeology. BAR-IS, 244: 118-151.*

MARTÍ B. 1989. Impressed cardial decoration and rock shelter art in eastern Spain. In D. Cahen and M. Otte (eds.), *Rubané&Cardial. Eraul, 39: 405-415.*

MARTÍ B. and HERNÁNDEZ M. S. 1988. *El Neolitic Valencià. Art rupestre i cultura material.* Servicio de Investigación Prehistórica. Valencia.

MESTRES J. 1991. Neolitització i Territori. *Estat de la Investigació del Neolític a Catalunya: 72-75.*

RODANÉS J. M., TILO M. A. and RAMÓN N. 1996. El abrigo de Els Secans (Mazaleón, Teruel). La ocupación del Valle del Matarraña durante el Epipaleolítico y el Neolítico Antiguo. *Al-Qannis, 6.*

STARK M. T. (ed). 1998. *The Archaeology of Social Boundaries.* Smithsonian Institution Press.

UTRILLA P. and MAZO C. 1994. El poblamiento prehistórico del rio Ésera (Ribagorza, Huesca). *Bolskan, 11: 53-67.*

VAN WILLIGEN S. 1999. L'*Epicardial* et la Néolithisation de la France Méditerranéenne. *II Congrés del Neolític a la Península Ibérica. Saguntum-Extra 2: 571-582.*

VICENT J. M. 1997. The Island Filter Model Revisited. In M. S. Balmuth, A. Gilman and L. Prados-Torreira (eds), *Encounters and Transformations. The Archaeology of Iberia in Transition: 1-13.*

WHITTLE A. 1998. Fish, faces and fingers: presences and symbolic identities in the Mesolithic. Neolithic transition in the Carpathian basin. In Budja M. (ed.), *Documenta Praehistorica, XXV: 133-150.*

ZILHÃO J. 1993. The spread of agro-pastoral economies across Mediterranean Europe. A view from the Far West. *Journal of Mediterranean Archaeology, 6 (1): 5-63.*

1997. Maritime pioneer colonisation in the Early Neolithic of the West Mediterranean. Testing the model against the evidence. *Poročilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji, XXIV: 19-43.*

ZVELEBIL M. 1996. The agricultural frontier and the transition to farming in the circum-Baltic region. In D. R. Harris (ed.), *The origins and spread of agriculture and pastoralism in Eurasia: 232-345.*