Cova de Can Sadurní (Begues, Barcelona). Towards the definition of a multiple funerary model inside caves during the middle Neolithic I in the northeast of the Iberian Peninsula

Manuel Edo[1], Ferran Antolín[2], Pablo Martínez[1], Concepció Castellana[1], Remei Bardera[1], María Saña[3], M. Mercè Bergadà[4], Josep Maria Fullola[4], Chus Barrio[1], Elicínia Fierro[1], Trinidad Castillo[1] and Eva Fornell[1]

[1] CIPAG. Col·lectiu per la investigació de la prehistòria i l'arqueologia del Garraf-Ordal
[2] CIPAG. IPAS (Integrative Prehistory and Archaeological Science), University of Basel
[3] Laboratori d'Arqueozoologia. UAB
[4] SERP. Seminari d'Estudis i Recerques Prehistòriques. UB
ferranantolin@gmail.com

Abstract
A series of burials dated to the second half of the Vth millennium cal BCE were discovered in Cova de Can Sadurní. These allow a first definition of a multiple funerary model that could have been practiced in several caves of the northeast of the Iberian Peninsula. The forced flexed position of the individuals indicates that the corpses must have been deposited inside a strongly-tied shroud. The bodies were not buried but deposited on the ground. It is estimated that this funerary episode lasted between 130 and 400 years.

Keywords
Multiple burial, Grave goods, Ritual, Postcardial, Molinot, Montboló

Résumé
Une série d'inhumations datées du seconde moitié du Vème. millenaire cal bC ont été découvertes dans la grotte de Can Sadurní. Elles ont permis une première définition d'un modèle funéraire collectif que on pourrait être pratiqué dans plusieurs grottes du nord-est de la péninsule Iberique. La position pliée des membres inférieurs indique que les corps ont été déposés dans la grotte fortement noués avec un linceul. Les individus n'ont pas été enterrés, mais placés dans le sol. On estime que cet épisode funéraire a duré entre 130 et 400 ans.

Mots-clés
Sépulture multiple, offrande funéraire, Ritual, Postcardial, Molinot, Montboló

Introduction

The early middle Neolithic in the northeast of the Iberian Peninsula is a transitional period between the early and the middle Neolithic, which, beyond the appearance of new pottery styles, is considered to reflect important changes in the productive and reproductive strategies of society. Among other novelties, larger sites with an increased amount of prestige goods that prove the existence of stable long-distance trade networks are known for the Middle Neolithic II period, along with the first large necropolises with individual or double burials (known as 'Sepulcres de Fossa') (for syntheses of the period see e.g. Martín and Villalba 1999; Clop 2010). Two pottery styles coexist during this phase in the northeast of the Iberian Peninsula: Molinot and Montboló (Blasco *et al*. 2005). Both have been used to name two cultural groups which would spread in this region before the development of the well-known 'Sepulcres de Fossa' culture (more or less contemporary to the French Chasséen culture), in the Middle Neolithic II. This phase could have an extent of 800 years (4800-4000 cal BCE).

The archaeological site of Cova de Can Sadurní is located on a slope overlooking a small and fertile plane, at c. 425 m asl, very close to the actual city of Barcelona, and includes both the deposits inside the cave and an external terrace of c. 200 m^2. A surface of around 50 m^2 was excavated inside the cave (Figure 1).

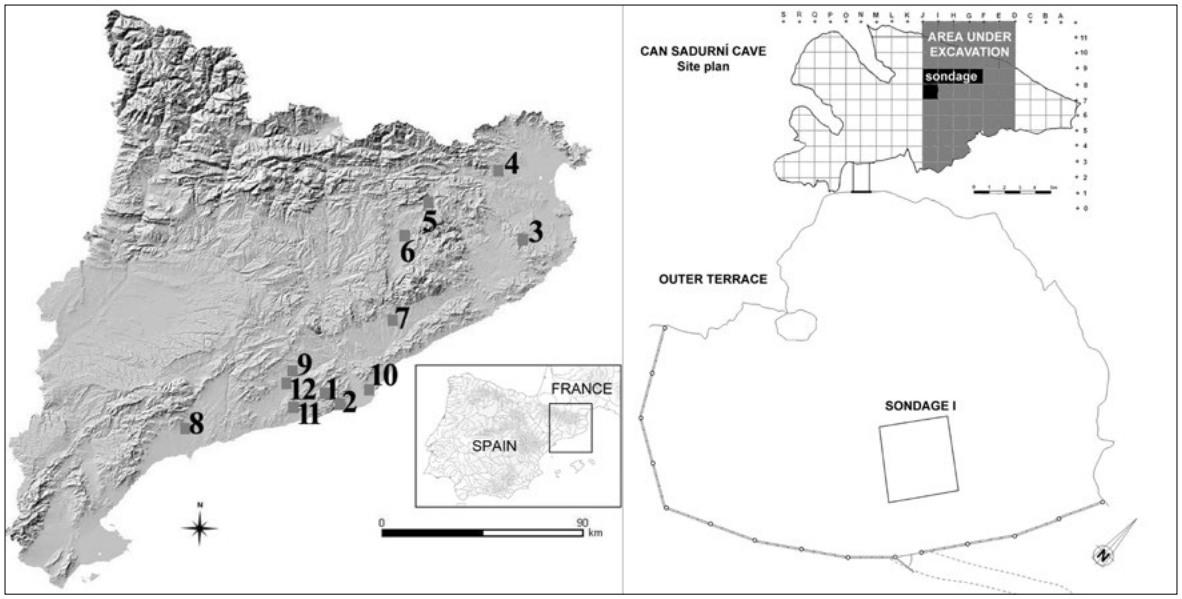

Figure 1. Location of the sites mentioned in the text and site plan of Cova de Can Sadurní. 1- Cova de Can Sadurní, 2- Mines de Can Tintorer, 3- Cova del Pasteral, 4- Cova de l'Avellaner, 5- Cova de les Grioteres, 6- Megàlits de Tavertet, 7- Ca l'Estrada, 8- Timba d'en Barenys, 9- Hort d'en Grimau, 10- Sant Pau del Camp, 11- Pujolet de Moja, 12- Pou Nou-2.

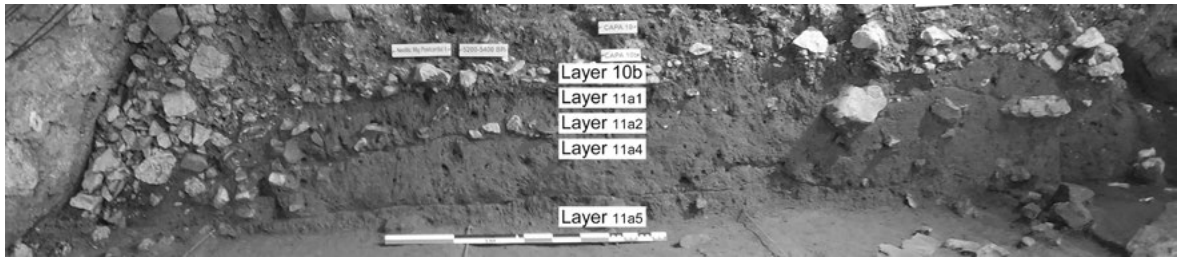

Figure 2. East profile of the excavation area, where the different layers mentioned in the text can be observed. Foto: CIPAG.

The cave is well known for its Holocene stratigraphy and the richness in archaeological materials, including several funerary episodes in recent Prehistory (Edo *et al*. 2011). Four different archaeological phases (from layer 11b to 9k1), dated to c. 4600-4000 cal BCE, being the earliest date 5790±40 BP (4763-4536 cal BC) and the youngest one 5279±31 BP (4232-3995 cal BC) (Edo *et al*. 2011)), each with a different use of the cave, have been identified within the middle Neolithic I. The stratigraphic description of the layers can be found in other works (Edo *et al*. 2011). We will focus in the phase *Neolític Postcardial 1(NP1)*, which has two distinct episodes: *NP1a*, which includes layers 11a5 and 11a4, and represents the use of the cave as a byre for ovicaprines, and *NP1b,* which includes layers 11a3, 11a2 and 11a1, during which the cave is used for funerary purpose. A more detailed description of these layers (Figure 2) and the funerary episode presented here can be found in Edo *et al*. (in press).

The funerary episode of the Middle Neolithic I of Can Sadurní. From the first findings to the 2013 field campaign

Research at the site started in 1978 and work is still ongoing. During the excavation of the Postcardial layers just above the NP1 phase, spare finds of human bones were observed. Some of them were

dated to c. 4200-4000 cal BCE (see Table 1). These were the first signs that human burials dating to this period could have existed. In 2012, the first assemblages of human bones in anatomical connection were detected (INH-3; INH-5; INH-6). Moreover, in layer 11a1 possible offerings were found associated to the burials. Two hearths, potentially contemporaneous to these remains were also excavated.

In 2013 layer 11a2, a layer of small-sized stones, was reached. Once extracted, it was discovered that this layer was covering three burials (INH1-INH2-INH4) in complete anatomical connection. The layer had a natural origin, possibly a small collapse of the cave roof and it is very well visible in the profiles of the excavated area. INH1 and INH2 were completely excavated, but only the left foot of INH4 was found within the excavated surface (the rest of the body is presumably in the part of the site that will not be affected by our project). The individuals were longitudinally aligned, following the cave wall. They were deposited at an approximated distance of 1 m from each other and at around 60 cm from the wall. All burials appear in flexed position, over the right side of the body, oriented in direction W-E from head to feet, face towards the entrance of the cave and the back against the cave wall. INH-1 was dated to 5460±40 BP and INH-4 to 5568±34 BP (Table 1). At the same depth and only some metres away from these burials, a combustion feature (Structure XIII) dated to 5560±50BP was found. Its nature is difficult to state (soil micromorphology samples were taken), and so the contemporaneity between the hearth and the burial (the feature could in fact pre-date the burials and be connected to the previous use of the cave as animal byre). The burials were considered to represent a new layer or episode (11a3), while the rest of the sediment below the stone-layer 11a2 was labelled 11a4.

The soil micromorphological analyses of layer 11a4 in contact with the burials INH1 and INH2 show that it is formed of unlaminated colluvium and anthropic sedimentation, generated by animal stabling practices: disarticulated silica phytoliths, some faecal spherulites, charcoal fragments and sporadically, ovicaprine dung fragments partially burnt. Reworked traces are observed mainly due to trampling and biological activity which is accentuated due to the high content of organic matter in this horizon.

In short, we conclude that the burials were placed in a surface in which there is evidence of pastoral activity.

Description of the burials

The agents responsible for the sedimentary episodes that took place inside the cave after the burial phase were responsible for the disassembling and dispersion of most of the burials, which were progressively displaced towards the wall of the cave (like most of the archaeological material). Only INH1, INH2 and INH4 were excavated *in situ* in their primary position.

Concerning the findings recovered in layers 11a1 and 10b, these will be part of a more detailed and ambitious study in order to individualize the skeletal parts, although we will present some first results here. Until now, among the hundreds of bone fragments found, four non-adult individuals and three adults have been identified. Preliminary observations lead us to estimate that around 10 individuals were probably buried in the excavated area. Taking into consideration that only around 20% of the site has been dug, one could imagine that this number is probably much larger.

1) Individual 1 (INH1)

INH1 is a primary burial in right lateral decubitus position of an adult male (Fig. 3), found in anatomical connection and with bone fractures produced by postdepositional agents, probably the rock fall that constitutes layer 11a2. It is in a flexed position, with his vertebral column in a forward bent position. The lower extremities are hyper-flexed, with the knees next to the thorax. Both feet are in lateral-medial view and hyper-extended. The left arm lies in a position of natural fall, slightly

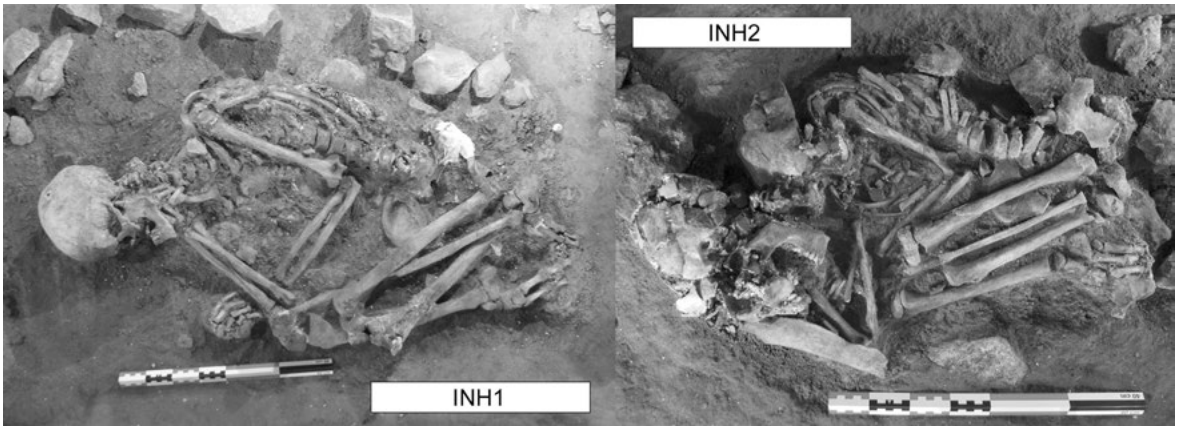

Figure 3. Individual 1 (INH1) and Individual 2 (INH2). Foto: CIPAG.

Figure 4. Hypothetical reconstruction of the shroud of Individual 1. CIPAG.

folded, with the hand at the level of the knees and under the right elbow. The right arm is totally folded on the chest and with the hand resting on the neck.

Its hyper-flexed position and the feet position indicate that the body was tied and probably wrapped in a shroud.

The offerings seem to have been deposited on the funerary shroud. A large fragment of an ovoid vase, with a black smooth burnished surface, of Montboló style, with two nipple-like handles in the upper part of the pot, was found on the lap of the individual.

On the chest, two selected portions of two goats (*Capra hircus*) were found. One was an adult animal with more than three years of age and the second one an infantile of five months.

The epiphysis and a large part of the diaphysis of a humerus of a young bovine (*Bos taurus*) of less than 15 months of age was found on the sternum of the individual. This element was radiocarbon dated to 5540±40 BP (4456-4335 cal BC), that is to say, c. 100 years older than the individual (INH1). This means that it could not be part of a consumption event related to the funerary ritual, but rather some kind of tool or symbolic element offered as a grave good (Figure 4).

2) Individual 2 (INH2)

This is a primary burial in right lateral decubitus position of a masculine infantile found in layer 11a3 (Figure 3). Sex identification was based on the measurements of the ilium and the mandible (following Krenzer 2006). Bones were found in anatomical connection. The cranium was highly fragmented and the bones of the breast and the dorsal spine were somewhat displaced backwards. The breakage and displacement was due to postdepositional processes, probably related to the rock fall identified as layer 11a2.

The body was in a hyper-flexed position. The right hand was on the chest while the left arm was in a position of natural fall. INH1 and INH2 were, in fact, in a very similar position.

The hyper-flexed position, like with INH-2, leads us to the conclusion that the individual had been tied. There was no associated apparel, although its head seemed to lie on a rib of a bovine.

3) Individual 3 (INH3)

This individual was identified from a number of infantile bones that were found in layers 10b and 11a1. It was not possible to recover all skeletal parts due to the permanent colluvium processes and the rock fall of layer 10b, which probably displaced or even destroyed them. There is no evident apparel linked to this individual.

4) Individual 4 (INH4)

This individual corresponds to a 5-6 year-old child, of unknown sex, that was found in layer 11a3 (see reference above for sex identification). Only the left foot was possible to recover, since the rest of the body probably lies in the unexcavated area of the settlement. In fact, the distal epiphysis of the tibia and the fibula were observed in the profile of the excavation, which makes us think that the whole skeleton is probably preserved in anatomical connection. The left foot was found in plantar view, like the left foot of INH1 and INH2. No grave goods could be connected to this individual.

5) Individual 5 (INH5)

It was found in layer 11a1. Despite the fragmentation and dispersion of the bones, it was possible to ascertain that it belonged to an adult individual. Two pottery fragments of Molinot style were spatially associated with them and considered as possible grave goods. One of the fragments was a fragment with a brushed surface (with a comb or a similar object) and four longitudinal ridges (*crestes*), both being characteristic of this pottery style. The second fragment still had the edge preserved, equally with a brushed surface and decorated with four ridges forming squares below the edge of the bowl: two ridges were perpendicular to the edge and two were parallel to it. The residue analyses of the latter fragment concluded that there were oxalates and phytoliths of barley, which lead to the interpretation that a fermented product of cereal origin had been produced in the pot, possibly some kind of beer product (Blasco *et alii.* 2008). If confirmed this would represent the oldest evidence of beer in Europe to date (Guerra-Doce 2014).

6) Individual 6 (INH6) and Individual 7 (INH7)

These skeletal parts were found in layer 10b, accumulated in the area of the northern wall of the cave as a result of the taphonomic processes already described.

The first one is a female individual (INH6) and the second is an infantile (INH7). The bones of the latter were surprisingly entirely preserved. Archaeological materials were found next to these remains but it is not possible to ascribe them to any of the individuals, since they are not in a primary position.

Radiocarbon dating of the individuals

There are six radiocarbon dates on human bone available for this funerary episode. Three of them were done in disarticulated bones since they were selected before the finding of the four individuals in anatomical connection. For each of the individuals INH1, INH2 and INH4, radiocarbon dates were carried out.The obtained results are presented in Table 1.

C14 Lab code	Inventory code	Date BP	Callibrated date 2 σ (95 %)
UBAR-1282	11CS-D10H11I11-10b	5260± 40 BP	4231−4193 and 4177−3979 cal BCE
Beta -197134	01CS-H9-IId-11-82	5290± 40 BP	4238-4036 and 4023-3994 cal BCE
Beta-210652	96CS-H9-Ig-10b-89	5340± 40 BP	4322-4292 and 4266-4048 cal BCE
Beta -363819	13CS-INH1-IIf-11a3-96/97	5460 ±40 BP	4368-4236 cal BCE
OxA-29640	13CS-INH2-IIf-11a3-1	5487±33 BP	4445-4261 cal BCE
OxA-29641	13CS-INH4-IIf-11a3-1	5568±34 BP	4459-4347 cal BCE

Table 1. Radiocarbon dates on human bone samples (Calibrations were done with OxCal v4.2.4. (Bronk Ramsey and Lee 2013; Reimer *et al*. 2013).

Everything points towards the fact that during this period the cavity was used as a cemetery by the community or communities that inhabited the terrace in front of the cave. This seems to take place several times within a period of between 134 and 398 years, according to the available radiocarbon dates (Fig. 5).

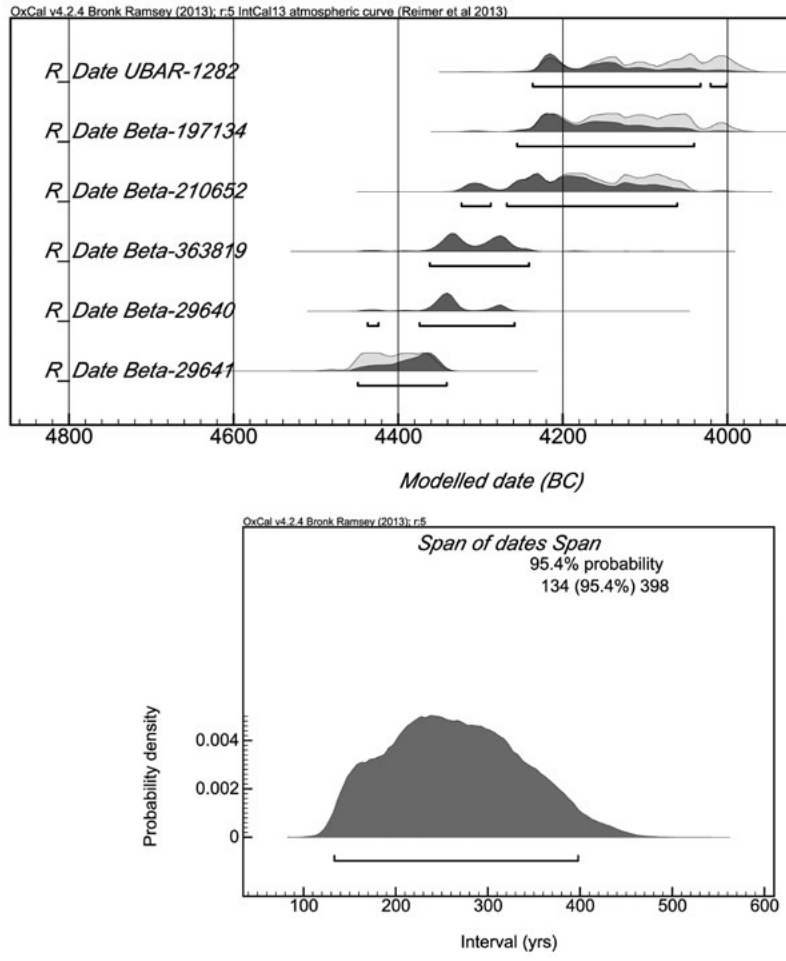

Figure 5. Radiocarbon dates based on human bone samples (calibration performed with OxCal v.4.2.4. (Bronk Ramsey and Lee 2013; Reimer *et al*. 2013).

The individuals of layer 11a3 would belong to the earliest phase of the episode and it is our hypothesis, relying on the radiocarbon dates provided in Table 1, that the individuals (disarticulated bones) recovered in layers 11a1 and 10b could represent the later phase. It is not possible to know if the same funerary gestures were repeated in the second phase, since no *in situ* burials were found. Nevertheless, our hypothesis is that the same tradition was continued (Figure 6).

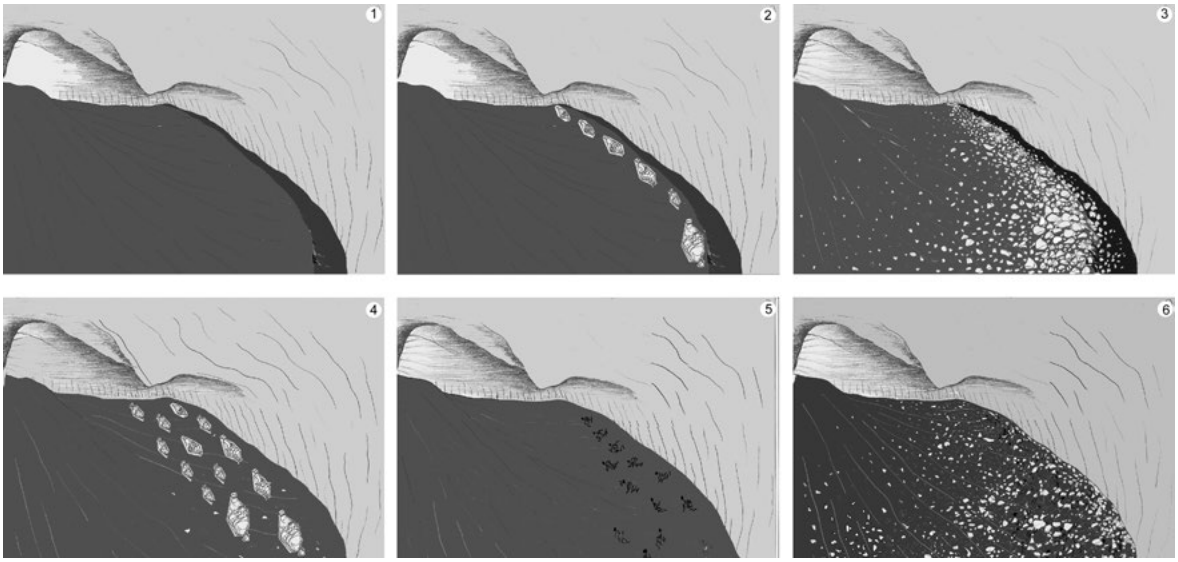

FIGURE 6. HYPOTHETICAL RECONSTRUCTION OF THE EVOLUTION OF THE FUNERARY EVENTS IN THE CAVE. CIPAG.

The treatment of the burials

As previously described, the positions of INH1 and INH2 are almost identical. The position of individuals INH3 and INH4 allow us to propose that they follow the same pattern, despite the fact that the skeletal parts are partly unconnected or only partly excavated.

The position of the feet of INH1, INH2 and INH4, and the hyper-flexed position of the extremities of the first two leads us to propose that ropes were used to keep a foetal position of the individuals. It is possible that a funerary shroud was also used.

Grave goods were only ascribed to two individuals. The fact that only fragments of the pots were recovered could be due to the fact that these pots were located outside the funerary shroud and suffered a stronger postdepositional displacement than the bones. Nevertheless, there are indicators that point to the fact that an important part of these offerings had to do with foods. The individual INH5 was connected to a vase containing a fermented beverage made with barley, while INH1 had selected portions of two goats in direct association with the burial. The presence of the fermented beverage is not only important for being an early find of this product, but also due to the investment of labour that it entails. One could speculate that beer could have been part of a feasting event linked to the burial. The goat extremities could suggest the same kind of episode, according to the archaeological indicators for feasts listed by Haydn (2001, Table 2.1). Feasts in connection to funerals are a well-known practice in anthropology and, as recently reviewed by Haydn (2009), they can be connected with social promotion or the creation of social networks within a community or with other communities. Large-scale funerary feasts already occurred in the early Neolithic, as demonstrated at the site of Kfar HaHoresh in Israel (Goring-Morris/Horwitz 2007). The finding of potentially unusual food products like beer in such a context gives some hint towards the significance of this event for the community.

Despite not having concluding evidence for the feast hypothesis, and still lacking a proper spatial evaluation of the findings, we do not exclude the possibility that the use of some of the hearths found in layer 11a1 could be related to the funerary ritual. More research is needed in this sense. These fires could have had a role during feasting events or a prophylactic effect against the smell of the decomposing bodies. Other elements need further research, like the finding of mandibles of goat between the burials INH4-INH2-INH1-INH3 or the potential content of the vessel fragment found with INH1, which has not yet been studied.

Furthermore, there are abundant materials in layers 10b and 11a1 which could be considered as potential grave goods, either due to their fine manufacture or because of their rarity (prestige goods) (Figure 7). We intend to focus in their study in the near future.

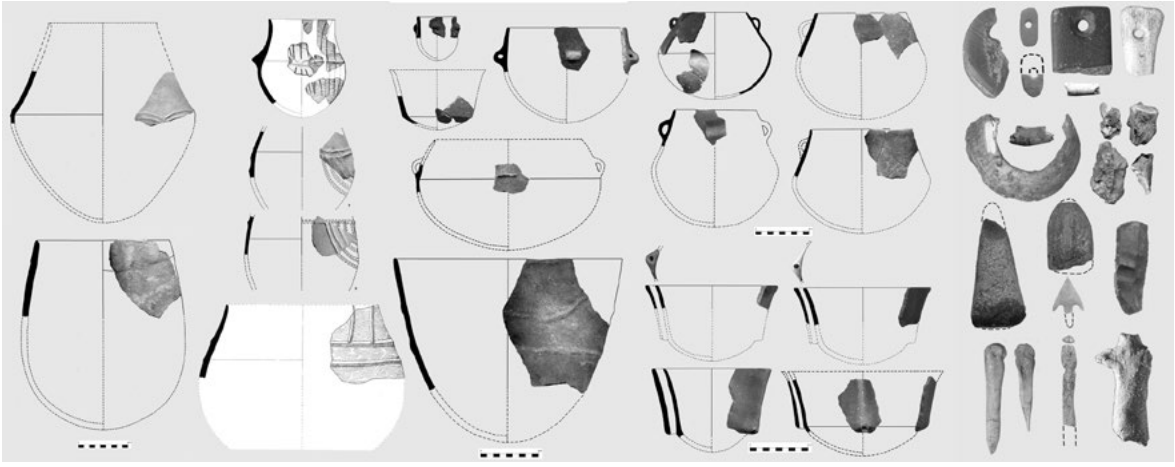

Figure 7. Materials associated to the burials or likely to be considered as funerary offerings. Two columns on the left: ceramic of Molinot style; central columns: ceramic of Montboló style; right column: other prestige goods found in the studied layers. Foto: CIPAG.

The funerary model of Can Sadurní in the context of the Northeast of the Iberian Peninsula and adjacent areas

The closest parallels to our case study are found at the other side of the Pyrenees, in south-eastern France. In relation to the funerary world of the early middle Neolithic in this area, Alain Beyneix said that 'in the Rossellon there is a will to gather together the cadavers. Funerary caves of the Montboló group (balma de Montboló, caune de Belestà, grotte de Montou) are true collective burials that gather members of the same group in a limited space and without any individual funerary structure. This behaviour expresses, without a doubt, close solidarity bonds between the living' (Beyneix 2002:631). This description gives a very similar picture to what was presented in this paper. Human remains were found at the shelter of Montboló (Guilaine 1974) and at the cave of Montou (Ponsich *et al*. 1990), both with Montboló pottery tradition. But the most interesting site from our point of view is the Caune de Bélesta (Claustre *et al*. 1993), with a collective burial in chamber VII. Around thirty individuals (15 adults, 13 children and 4 non-adults) were surrounded by a rich and homogeneous pottery assemblage that gave to the deposit a particular cultural specificity. The context is dated to 5640±120BP (4771-4261 cal BCE). From the available information (Claustre *et al*. 1993) we concluded that the individuals had their back against the wall of the cave and their faces oriented to the entrance of the cave. The position of the burials and their associated offerings seems to coincide with the findings recovered at Cova de Can Sadurní.

The funerary deposits found in the north-east of the Iberian Peninsula are diverse. Even though there are several multiple burials in caves, single burials were also found. Among the known cave contexts, one of the potentially oldest examples – although all these funerary deposits should be re-dated using AMS- is Cova de l'Avellaner (Girona). Charcoal remains from chamber 1 were dated to 5920±180BP (5292-4401 cal BCE) and human bones from chamber 2 to 5830±100BP (4934-4462 cal BCE) (Bosch and Tarrús 1991). Skeletal parts were disarticulated, although the authors mentioned that there were indicators towards a flexed position against the wall, similar to what has been described for our study site. A minimum of seven individuals lacking any type of significant grave goods were distinguished on the basis of aDNA analyses (Lacan *et al*. 2011). The authors suggest that this practice of multiple burials could have a Mesolithic tradition. Yet, given that multiple burials are found among incoming populations originally from the eastern Mediterranean (according to aDNA analyses) in the very first stages of the early Neolithic in an earlier phase (layer 18) of Cova de Can Sadurní (Edo *et al*. 2011; Gamba *et al*. 2011), this hypothesis should be rejected.

Another collective funerary space where 9 individuals (6 adults, 1 non-adult and 2 infantile) were buried was identified in chamber III of Cova del Pasteral (La Selva, Girona), dated to 5270±70BP (4315-3964 cal BCE) (Bosch 1985; Campillo *et al*. 1986; Bosch/Tarrús 1990).

As a last example, Gallery 11 of Cova de les Grioteres (Vilanova de Sau, Osona), was also used for funerary purposes for c. 20 individuals that were found very fragmented and dispersed. Many of the bones were burnt, like in Cova de la Pastora. Selected portions of fauna (sheep, goat, deer and cattle) were found as grave goods (Castany 1992), together with pots of Montboló style. The context is dated to 5300±180BP (4486-3711 cal BCE) (Castany 1995).

Other funerary models were found in this region. Funerary tumuli are known from the first half of the Vth millennium cal BCE in the area of Tavertet (Osona): Font de la Vena dated to 6190±100BP (5365-4851 cal BCE, on charcoal); Padró II dated to 5580±130BP (4723-4071 cal BCE), 5600±130BP (4771-4080 cal BCE), 5770±80BP (4824-4451 cal BCE) and 5870±100BP (4986-4501 cal BCE, all dates made on charcoal); Padró III and Collet de Rajols. These are the first manifestations of megalithism in the region, all linked with the pottery of Montboló tradition (Cruells *et al*. 1992).

Finally, individual burials were found in open-air sites, mainly in the central Catalan coast, where Cova de Can Sadurní is located, or close to it. One example is Ca l'Estrada (Canovelles, Vallès Oriental). Two individual burials were found in a flexed position and it was interpreted that the burials were tied. There is one radiocarbon date available: 5740±40BP (4696-4491 cal BCE) (Subirà *et al*. in press). This could be one of the earliest open-air necropolis in the area, and it could be considered a precedent to the well-known necropolis found towards the end of the Vth millennium cal BCE like in Timba d'en Barenys (5240±160BP, 4369-3700 cal BCE), with an individual burial in a silo pit; Hort d'en Grimau (5250±65BP, 4254-3957 cal BCE; 5270±65BP, 4260-3965 cal BCE), with burials in pits with tumuli made of stones (Mestres 1988-89); Sant Pau del Camp (5160±130BP, 4319-3697 cal BCE, on human bone), with twenty individual burials mostly in a similar position to the ones of Can Sadurní, and equally considered to have been wrapped in a funerary shroud (Chambon 2008) and potentially connected to multiple hearths (Molist *et al*. 2008); Pujolet de Moja (4990±70BP, 3946-3656 cal BCE)) (Mestres *et alii.* 1997) as well as Pou Nou-2 (Nadal *et al*. 1994) and burial 1 of Can Tintorer (Villalba *et alii.* 1986), without radiocarbon dating available but belonging to the same chronological framework. The predominant pottery tradition found in all these burials is of Molinot style.

Conclusions

The burials of the middle Neolithic I studied are organized as individual depositions of the bodies in a common space, to which the members of the community would have a more or less frequent access. A certain treatment of the body was observed and the potential existence of funerary feasts has been

discussed. No differences in the funerary apparel among individuals were found. There seems to be a lack of significant prestige goods.

A review of the available data on funerary contexts of the region showed that the closest parallels to our case study are found in the Montboló region. The fact that both Montboló and Molinot pottery traditions are found in Cova de Can Sadurní might be relevant for several aspects. First it demonstrates that both styles were contemporary. In Can Sadurní however, both traditions co-exist within a funerary model that seems to be more frequent among the Montboló tradition. This would point towards the existence of important contacts with this region maybe representing the start of the social networks that are observed during the middle Neolithic II in this area when a circulation of prestige goods is observed on a large scale (Vaquer and Lea 2011). In fact, the later pottery productions of the 'Sepulcres de Fossa' culture that will develop in this region are a small evolution of the ceramic typology of Montboló tradition.

References

Bergadà, M.M; Cervelló, J.M. (2011) – Estratigrafia, micromorfologia i paleoambient de la cova de Can Sadurní (Begues, Baix Llobregat) des dels c. 11.000 fins els 5.000 anys BP. In Blasco, A; Edo, M.; Villalba, M.J., eds. lits.- Jornades '30 anys d'investigació arqueològica a Garraf'. Milan: Edar-Hugony. Milano. p. 95-108.

Blasco, A., Edo, M.; Villalba, M.J. (2005) – Cardial, epicardial y postcardial en Can Sadurní (Begues, Baix Llobregat). In Arias, P.; Ontañon, R.; Garcia-Moncó, C., eds. lits.- III Congreso del Neolítico en la Península Ibérica. Santander. p. 867-878.

Blasco, A.; Edo, M.; Villalba, M.J. (2008) – Evidencias de procesado y consumo de cerveza en la cueva de Can Sadurní (Begues, Barcelona). In Hernández, M.S., Soler, J.A.; López, J.A., eds. lits.- IV Congreso Neolítico Peninsular. Alicante. Vol. I p. 428-431.

Bosch, A. (1985) – La cova del Pasteral: un jaciment neolític a la vall mitjana del Ter. In Homenatge al Dr. Josep M. Coromines. Centre d´Estudis Comarcals de Banyoles, vol. II, p. 29-56.

Bosch, A.; Tarrús, J. (1990) – La Cova Sepulcral del Neolithic Antic de l'Avellaner (Cogolls, Les Planes d'Hostoles, La Garrotxa). Girona: Serie Monografica 11. 125p.

Bronk Ramsey, C.; Lee, S. (2013) – Recent and Planned Developments of the Program OxCal. Radiocarbon. 55:2-3, p. 720-730.

Campillo, D; Vives, E. (1986) – Estudi de les restes humanes de la cova de 'El Pasteral' (Girona). In Homenatge al Dr. Josep M. Coromines. Centre d´Estudis Comarcals de Banyoles, vol. II, p. 57-70.

Castany, J.; Guerrero Sala, L.A. (1992) – Població i antropología d'un nínxol d'inhumació col·lectiva i successiva del grup Montboló a Grioteres (Vilanova de Sau, Osona). In Estat sobre la investigació del Neolític a Catalunya. Andorra: IX CIAP, p. 153-154.

Chambon, Ph. (2008) – Alguns trets de les pràctiques funeràries del Neolític Postcardial. Quarhis. 4, p. 70-75.

Claustre, F.; Zammit, J.; Blaize, Y. (1993) – La Cauna de Bélesta: une tombe col·lective il y a 6000 ans. Centre d'Anthropologie des sociétes rurales et Château-Musée de Bélesta, Toulouse et Belesta. 286 p.

Clop, X. (2010) – Le IVe millénaire avant notre ère dans le nord-est de la Péninsule Ibérique. In Lemercier, O.; Furestier, R.; Blaise, E., eds. lits.- 4e Millénaire. La transition du Néolithique moyen au Néolithique final dans le sud-est de la France et les régions voisines. Lattes: Publications de l'UMR 5140 / ADAL (Monographies d'Archéologie Méditerranéenne, 27). p. 249-259.

Cruells, W; Castells, J; Molist, M. (1992) – Una necròpolis de 'cambres amb túmul complex' del IV mil·leni a la Catalunya interior. In Estat de la Investigació sobre el Neolític a Catalunya. IX CIAP. Andorra, p. 244-248.

Edo, M.; Blasco, A.; Villalba, M.J. (2011) – La cova de Can Sadurní, guió sintètic de la prehistòria recent de Garraf. In Edo, M.; Blasco, A.; Villalba, M.J., eds. lits.- Jornades '30 anys d'investigació arqueològica a Garraf'. Milan: Edar-Hugony, p. 13-95.

Edo, M.; Antolín, F.; Barrio, M.J. (2012) – Can Sadurní (Begues, Baix Llobregat), de la captación de recursos abióticos al inicio de la minería de alumino-fosfatos (10500-4000 cal ANE) en el Macizo de Garraf. Rubricatum 4. p. 299-306. Congrés Internacional Xarxes al Neolític.

Edo, M., [*et al*.] (in press) – El episodio funerario del neolítico antiguo cardial pleno de la cueva de Can Sadurní (Begues, Barcelona). Estado actual de la cuestión. In Gibaja, J.F. [*et al*.], eds. lits.- Mirando a la Muerte: Las prácticas funerarias durante el neolítico en el noreste peninsular. Castellón: E-ditArx – Publicaciones Digitales.

Gamba, C. [*et al*.] (2011) – Ancient DNA from an Early Neolithic Iberian population supports a pioneer colonization by first farmers. Molecular Ecology. 21, p. 45-56.

Guerra-Doce, E. (2014) – The origins of inebriation: archaeological evidence of the consumption of fermented beverages and drugs in Prehistoric Eurasia. Journal of Archaeological Method and Theory. DOI 10.1007/s10816-014-9205-z.

Goring-Morris, N.; Horwitz, L.K. (2007) – Funerals and feasts during the Pre-Pottery Neolithic B of the Near East. Antiquity. 81. p. 902-919.

Guilaine, J. (1974) – La Balme de Montboló et le Néo!ithique de l'Occident Méditerranéen. Toulouse: Institut Pyrénéen d'Etudes Anthropologiques. 201 p.

Hayden, B. (2001) – Fabulous feasts. A prolegomenon to the importance of feasting. In Dietler, M.; Hayden, B., eds. lits.- Feasts. Archaeological and ethnographic perspectives on food, politics, and power. Alabama: University of Alabama Press. p. 23-64.

Hayden, B. (2009) – Funerals as feasts: why are they so important?. Cambridge Archaeological Journal 19: p. 29-52.

Krenzer, U. (2006) – Compendio de métodos antropológico forenses para la reconstrucción del perfil osteo-biológico. Tomo II. Métodos para la determinación del sexo. Guatemala: Centro de Análisis Forense y Ciencias Aplicadas (CAFCA).

Lacan, M. [*et al*.] (2011) – Ancient DNA suggests leading role played by men in the Neolithic dissemination. PNAS. 108, p. 18255-18259.

Martín, A., Villalba, M.J. (1999) – Le Néolithique moyen de la Catalogne, XXIVe Congrès Préhistorique de France-Le Néolithique du Nord-Ouest méditerranéen, Carcassonne 26-30 septembre 1994. Société Préhistorique Française. p. 211-224.

Martínez, P., Fortó, A. – Memòria científica de la intervenció arqueològica preventiva Ronda Nord de Granollers Tram II (Les Franqueses del Vall'es-Canovelles). Localització i excavació del jaciment de Ca l'Estrada (Canovelles) [Unpublished]. 2007.

Mestres, J. (1988-89) – Les sepultures neolítiques de l'Hort d'en Grimau (Castellví de la Marca, Alt Penedès). Olerdulae, Revista del Museu de Vilafranca. 1-4. p. 97-129.

Mestres, J. [*et al*.] (1997) – El Pujolet de Moja (Olerdola, Alt Penedès), Ocupació d'un territori durant el Neolític i Primera Edat del Ferro. Tribuna d'Arqueologia. 1995-96. p. 121-148.

Molist, M.; Vicente, O.; Farré, R. (2008) – El jaciment de la Caserna de Sant Pau del Camp: aproximació a la caracterització d'un assentament del Neolític antic. Quarhis. 4. p. 14-24.

Nadal, J.; Socias, J.; Senabre, M.R. (1994) – El jaciment neolític de Pou Nou-2 de Sant Pere de Molanta (Olèrdola). Gran Penedès. 38. p. 17-19.

Ponsich, P.; Treinen-Claustre, F. (1990) – Le gisement néolitjique de la galerie close de la grotte de Montou en Roussilon. In Autour de Jean Arnal. Laboratoire de Paléobotanique. Université des Sciences et Techniques du Languedoc. p. 101-122.

Reimer, P.J. [*et al*.] (2013) – IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0-50,000 Years cal BP. Radiocarbon. 55:4. p. 1869-1887.

Vaquer, J., Lea, V. (2011) – Diffusion et échanges au Néolithique en Méditerranée nord-occidentale, In Blasco, A., Edo, M., Villalba, M.J. eds. lits.- La cova de Can Sadurní i la Prehistòria de Garraf. Recull de 30 anys d'investigació. Milan: Edar-Hugony. p. 265-291.

Villalba, M.J. [*et al*.] (1986) – Les mines neolítiques de Can Tintorer, Gavà. Excavacions 1978-1980. Barcelona: Generalitat de Catalunya. 203 p. (Excavacions arqueolgògiques a Catalunya núm.6).