Research Article

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Mountains, Herds and Crops: Notes on New Evidence from the Early Neolithic in the Southern Central Pyrenees

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Abstract: After years of intense fieldwork, our knowledge about the Neolithisation of the Pyrenees has considerably increased. In the southern central Pyrenees, some previously unknown Neolithic sites have been discovered at subalpine and alpine altitudes (1,000–1,500 m a.s.l.). One of them is Cueva Lóbrica, 1,170 m a.s.l., which has an occupation phase with impressed pottery dated *ca.* 5400 cal BCE. Another is Coro Trasito, 1,558 m a.s.l., a large rock shelter that preserves evidence of continuous occupations in the Early Neolithic, 5300–4600 cal BCE. Evidence of human occupation at higher altitudes has also been documented. In the Axial Pyrenees, at the Obagues de Ratera rock shelter, 2,345 m a.s.l., an occupation has been dated to around 5730–5600 cal BCE. At Cova del Sardo, in the Sant Nicolau Valley, at 1,780 m a.s.l., a series of occupations have been excavated, dated to *ca.* 5600–4500 cal BCE. These sites allow us to discuss patterns of occupation of the mountainous areas between the Late Mesolithic and Early Neolithic. Recent data suggest that the last hunter–gatherer occupied all altitudinal stages of the Pyrenees, both in the outer and inner ranges. A change in the settlement pattern seems to have occurred in the Early Neolithic, which consisted of a concentration of occupations in the valley bottom and mid-slopes, in biotopes favourable to both herding and agriculture.

Keywords: Early Neolithic, Mesolithic, Pyrenees, agriculture, livestock

1 Introduction

The Pyrenees were, for long, overlooked by archaeologists and considered to have had only a marginal role in the process of Neolithisation of the western Mediterranean. Until 30 years ago, the only Early Neolithic

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Table 1: Summary of sites mentioned in the text

Site	Type	Altitude (m a.s.l.)	Basin	Location
Cova Gran	Cave/Rockshelter	385	Segre	Outer ranges
Forcas II	Cave/Rockshelter	400	Ésera	Outer ranges
Cova del Parco	Cave/Rockshelter	420	Segre	Outer ranges
Cueva del Moro de Olvena	Cave/Rockshelter	450	Ésera	Outer ranges
Font del Ros	Open air	466	Llobregat	Outer ranges
Cueva Chaves	Cave/Rockshelter	663	Cinca	Outer ranges
Cova Colomera	Cave/Rockshelter	670	Noguera Ribagorçana	Outer ranges
Esplugón	Cave/Rockshelter	800	Gállego	Outer ranges
Balma Margineda	Cave/Rockshelter	993	Valira	Axial Pyrenees
Cueva Lobrica	Cave/Rockshelter	1,170	Cinca	Axial Pyrenees
Puyascada	Cave/Rockshelter	1,320	Cinca	Axial Pyrenees
Camp del Colomer	Open air	1,385	Valira	Axial Pyrenees
Cova de Els Trocs	Cave/Rockshelter	1,558	Ésera	Axial Pyrenees
Coro Trasito	Cave/Rockshelter	1,561	Cinca	Axial Pyrenees
Cova del Sardo	Cave/Rockshelter	1,780	Noguera Ribagorçana	Axial Pyrenees
Dolmen de la Font dels Coms	Open air	1,850	Noguera Pallaresa	Axial Pyrenees
Pla del Orri	Open air	2,150	Segre	Axial Pyrenees
Obagues de Ratera	Cave/Rockshelter	2,320	Noguera Pallaresa	Axial Pyrenees
Orris de la Torbera de Perafita I	Open air	2,365	Valira	Axial Pyrenees
Abric de l'Estany de la Coveta I	Cave/Rockshelter	2,446	Noguera Pallaresa	Axial Pyrenees

site known in the inner sector of the central Pyrenees was Balma de la Margineda (Guilaine & Martluff, 1995). Today, the number of sites dated between *ca.* 5700 and 4500 cal BCE in this region have considerably increased (Table 1). Most of them are in the southern Pyrenees, in the basins of the rivers Segre and Cinca. This sector of the mountain range, which has an east-west extension of about 125 km, hosts all the highest peaks of the Pyrenees (Aneto 3,404 m a.s.l., Posets 3,369 m a.s.l. and Monte Perdido 3,355 m a.s.l.). In this area, Neolithic sites are located at different altitudes. Balma de la Margineda is one of the sites located at the lowest altitude not far from the confluence of the rivers Valira and Segre. Conversely, recently excavated sites are located at mid and high altitudes, such as the open-air site Camp del Colomer (Fortó & Vidal, 2016), Cova de Els Trocs (Rojo et al., 2013, 2015b), Coro Trasito (Clemente et al., 2016), Cova del Sardo (Gassiot et al., 2015, 2017; Mazzucco, Clemente, & Gassiot, 2019), Abric de les Obagues de Ratera (Gassiot et al., 2020) and Abric de l'Estany de la Coveta I (Gassiot, 2016). Other Neolithic sites are located in the outer areas of the mountain range, such as the recently excavated Cova Colomera (Oms et al., 2015), Cova Gran (Mora, Benito, Martinez-Moreno, González-Marcén, & De la Torre, 2011) and other cave sites excavated during the last decades of the twentieth century, such as Cova del Parco (Petit, 1996), Forcas II (Utrilla & Mazo, 2014), Cueva Chaves (Baldellou, 2011; Mazzucco, Clemente, Gassiot, & Gibaja, 2015; Utrilla & Laborda-Lorente, 2018), Cueva del Moro de Olvena (Baldellou & Utrilla, 1995) and the open-air site Font del Ros (Pallarés, Bordas, & Mora, 1997; Terradas, Mora, Plana, Parpal, & Martínez-Moreno, 1992), just to cite a few of the most relevant archaeological sites.

In light of all the new data generated by new excavations and surveys, today, it is possible to revise the Neolithisation process of the area. Until now, proposed models tended to emphasise the role of lowland areas as the focus of Neolithisation in the entire region, connected to the arrival of the first farming communities in the coastal areas of southern France and the north-eastern Iberian Peninsula. Seafaring farmers would have first settled the littoral and pre-littoral areas, then rapidly spread into the inner territories (García-Puchol, Diez-Castillo, & Pardo-Gordó, 2018; Oms, Terradas, Morell, & Gibaja, 2018). Nevertheless, other authors have suggested that the early dates obtained from the charcoal samples from Balma de la Margineda (*ca.* 6050–5470 cal BCE) and Cueva Chaves (*ca.* 5800–5550 cal BCE) might indicate a trans-Pyrenean route of Neolithic diffusion directly from southern France (Cabanilles & Martí-Oliver, 1997; Utrilla, 2012; Utrilla & Domingo, 2014). Recent radiocarbon dates on charred cereal caryopsis recovered from flotation material from Balma de la Margineda partially confirmed such scenario (Manen et al., 2019)

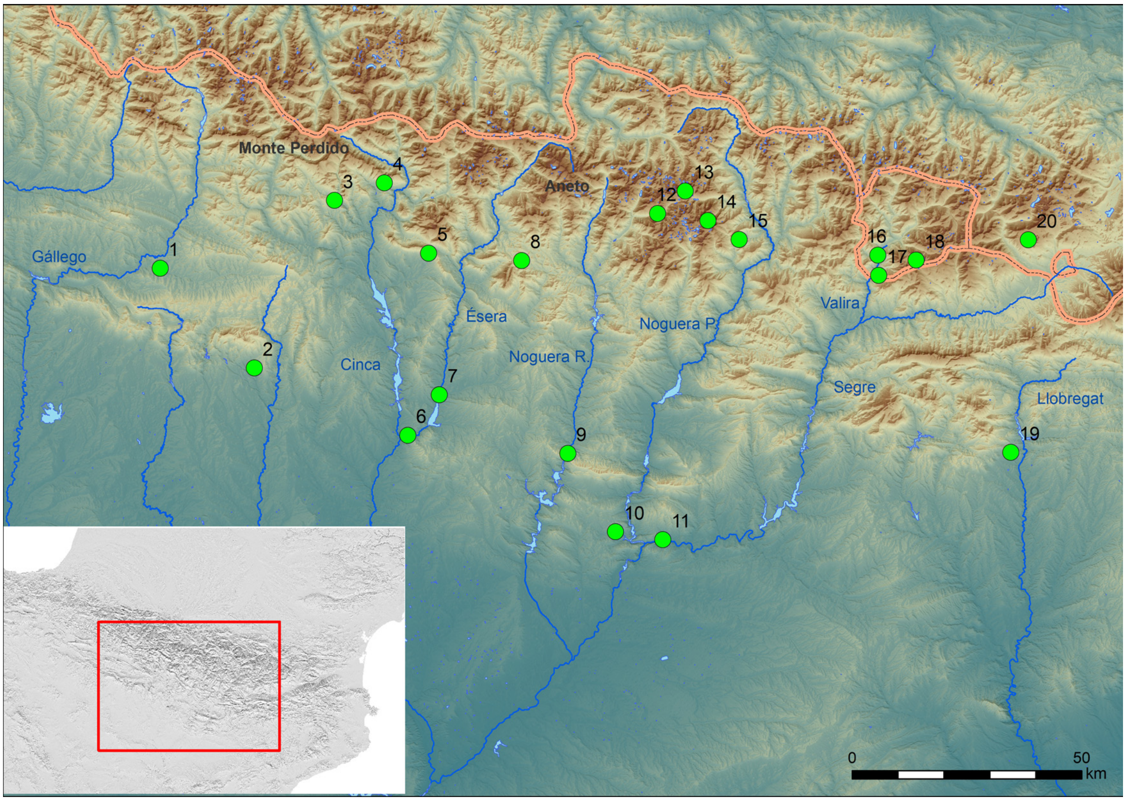

Figure 1: Geographical framework and sites cited in the text. (1) Abrigo de l'Esplugón; (2) Cueva de Chaves; (3) Cueva Lóbrica; (4) Coro Trasito; (5) La Puyascada; (6) Cueva del Moro de Olvena; (7) Abrigo de las Forcas II; (8) Els Trocs; (9) Cova Colomera; (10) Cova Gran; (11) Cova del Parco; (12) Cova del Sardo; (13) Obagues de Ratera; (14) Abric de l'Estany de la Coveta I; (15) Dolmen de la Font dels Coms; (16) Balma de la Margineda; (17) Camp del Colomer; (18) Orris de la Torbera de Perafita I; (19) Font del Ros; and (20) Pla del Orri.

Moreover, the dates suggest that the Pyrenees might have played an active role in the Neolithisation process in the north-east of the Iberian Peninsula and not a secondary or marginal area of diffusion. In this study, we discuss the Neolithisation of the Pyrenees by integrating available evidence with the data obtained from recent excavation of archaeological sites located in the interior sector of the mountain range, such as Abric de Les Obagues de Ratera, Cova del Sardo de Boí, Els Trocs and Coro Trasito (Figure 1).

2 The Beginning of the Neolithic in the Southern Central Pyrenees: Archaeological Data

2.1 The Last Hunter–Gatherers in the Central Pyrenees (8200–5600 cal BCE)

Groups of hunter–gatherers were occupying the mountainous area of the Pyrenees and pre-Pyrenees since the final phases of the Pleistocene, as testified for example from sites such as Montlleó (1134 m a.s.l.) (Mangado et al., 2010, 2011), Balma Guilanyà (1157 m a.s.l.) (Casanova, Martínez-Moreno, & Mora, 2006; Martínez & Mora, 2009) and Balma de la Margineda (Guilaine & Martluff, 1995). Magdalenian occupations are widespread in all the outer ranges of the Pyrenean areas (Langlais et al., 2012; Mangado et al., 2010; Mas et al., 2018; Utrilla et al., 2012), but hunter–gatherers did not penetrate the Axial. It is only after the Younger Dryas (10700–9700 cal BCE), which was an especially cold period in the area of investigation (Catalan et al., 2013; Fernandes, Oliva, Palma, Ruiz-Fernández, & Lopes, 2017; Pèlachs et al., 2012), that traces of human presence start to be detected at higher altitudes (Gassiot et al., 2017).

The first evidence of the presence of hunter–gatherer groups in the subalpine and alpine belt consists of rather ephemeral occupations, associated with brief occupations of both open-air and cave contexts. One example is the megalithic burial at the Dolmen de la Font dels Coms, located in a secondary valley of the Noguera Pallaresa River. Here, charcoal from a post-hole under the tombstone has been dated to 8750–8560 cal BCE (Gassiot, 2016). The feature is associated to an occupation layer about 30 cm under the megalithic tumulous, rather poor in archaeological materials, consisting of only a few lithic flakes. A similar chronology is indicated by charcoal from Orris de la Torbera de Perafita I dated between 8765 and 8480 cal BCE (Orengo, Palet, Ejarque, Miras, & Riera, 2014). A stratigraphic survey realised in a hut dated to the medieval period revealed the presence of underlying occupational layers with relatively abundant lithic remains, documenting a flake-based technology on non-flint raw materials. Somewhat more recent is the occupation of the Obagues de Ratera rock shelter, in the upper sector of the Espot Valley, in the National Park of Aigüestortes i Estany de Sant Maurici (Figure 2). A combustion structure was excavated in the glacial till soil and later delimited by a series of vertically placed, flat stones. Its interior contained a darkish and charcoal-rich sediment (wood charcoal probably) from a twig of pine (*Pinus sylvestris/uncinata* type) that gave a date of 8180–7725 cal BCE (Gassiot et al., 2020).

This pattern, with brief occupations associated with combustion structures and a sparse material record, continues during the seventh millennium and first half of the sixth millennium as well. At the rock shelter, Abric de l'Estany de la Coveta I, also in the National Park of Aigüestortes i Estany de Sant Maurici, an occupational layer with a small hearth dated to 7000–6575 cal BCE was excavated. The scarce, associated lithic assemblage included a flake used for hide scraping (Gassiot, 2016). At the Obagues de Ratera rock shelter, the second phase of occupation is dated to between 5732 and 5638 cal BCE. The date was obtained from a small branch of pine from a combustion area in the interior part of the rock shelter. During this phase, an alignment of stones was placed under the cave vault, probably to support a wooden wall, while a hearth was placed in the interior of the shelter. A series of geometric backed tools (triangles,

Figure 2: General view of Obagues de Ratera rockshelter during its excavation in 2015.

trapezes and segment) were recovered from the sediment around the hearth, including tools made of raw materials that were derived from the more external ranges of the Pyrenees and the Ebro Basin, more than 60–50 km from the site, but also from locally available rock crystal. Geometric tools include abrupt retouched trapezes and triangles and double-bevelled triangles and segments (Figure 3). This, small but interesting, set of tools show strong resemblance with the contemporary assemblages from sites located at lower altitudes, in particular, Forcas II layer V (Utrilla & Mazo, 2014) and the Esplugón layer 3sup (Utrilla et al., 2016), which are considered to attest the introduction of technical innovations in the retouch modes of the geometric tips (i.e. double-bevelled retouch).

A similar chronology has been provided by a layer underlying the medieval hut P009 excavated at Orris de la Torbera de Perafita I, in Andorra (Orengo et al., 2014). Charcoal from the occupational layer has been dated to 5610–5475 cal BCE. A contemporary date of 5610–5380 cal BCE was provided by pine charcoal (*Pinus nigra*) dated from a hearth of Phase 9 at the Cova del Sardo rock shelter, a site located in the Sant Nicolau Valley (Gassiot et al., 2014, 2015). In all these contexts no pottery fragments have been recovered. While Abric de l'Estany de la Coveta, Cova del Sardo-Phase 9 and Orris de la Torbera de Perafita I are characterised by a poor material record, the lithic assemblage from Obagues de Ratera is, however, relatively more abundant including more than 200 lithic remains. In the eastern Pyrenees, a similar context can be found at the Pla del Orri site on the Enveig Mountain. The site, which presents several occupations dated to the final phases of the Neolithic, is characterised by a brief episode of occupation dating to 5617–5390 cal BCE (Mercadal et al., 2021).

Figure 3: Geometric microliths from the second phase of occupation at Obagues de Ratera (5732–5638 cal BCE). Legend: (a) trapezes (direct abrupt retouch), (b) trapeze (alternate abrupt retouch), (c) trapeze (alternate abrupt retouch), (d) triangle (direct abrupt retouch), (e) triangles (double-bevelled), and (f) segments (double-bevelled).

The above-mentioned sites indicated that, at least since 8600 cal BCE, groups of hunter–gatherers frequented alpine altitudes. High-altitude sites attest brief occupations probably associated with occasional hunting episodes and the creation of overnight shelters during displacements through the mountains. In these sites, the archaeological record is always rather poor and reflects short stays. Chert from the outer areas of the Pyrenees is occasionally found in these sites but always in very small quantities, suggesting that reserves of knappable raw materials were not needed. Simultaneously, valley bottoms and the outer pre-Pyrenean ranges were also occupied by groups of hunter–gatherers, as documented by the layers C5/6 and C4 at Balma de la Margineda (Guilaine & Martluff, 1995), layers I, II and IV at Forcas II (Utrilla & Mazo, 2014) and layers 6–3 at Esplugón (Utrilla et al., 2016). All these sites show long stratigraphic sequences with repeated episodes of occupation distributed over several millennia. The great quantity of material remains suggest a more prolonged and stable occupation. Therefore, a dual pattern can be observed with the larger and more prolonged occupation at lower altitudes and briefer and more ephemeral stays in the alpine and subalpine belt. This model would last until at least 5600 cal BCE or 5400 cal BCE if we consider the dates from Orris de la Torbera de Perafita I and Cova del Sardo-Phase 9 to be correct (Table 2).

2.2 The First Farmers and Herders of the Central Pyrenees (5600–4500 cal BCE)

Starting from the second third of the sixth-millennium cal BCE, archaeological sites reveal the presence of groups of farmers and herders occupying caves and rock shelters in the valley bottoms of the Pyrenees and in the lowlands at altitudes inferior to 1,600 m a.s.l..

As already pointed out in the introduction, the site showing the earliest date is the Balma de la Margineda rock shelter, in the Valira valley. Nevertheless, this rock shelter shows a very complex stratigraphy affected by post-depositional problems including intrusions of materials from later periods (i.e. Iron Age). As result, layer 3 has provided a series of radiocarbon dates which are distributed randomly with several stratigraphic inversions. If we leave aside those concerns, three main moments of occupation can be highlighted based on the short-lived samples: one early occupation between 5635 and 5550 cal BCE, a second Neolithic occupation between 5475 and 5075 cal BCE and the third moment between 4700 and 4500 cal BCE (Manen et al., 2019; Oms, Gibaja, Mazzucco, & Guilaine, 2016).

Early Neolithic occupations are well known as well in the outer ranges of the pre-Pyrenees, for example Cueva Chaves, in the southern side of the Sierra de Guara. Two dates on *Ovies aries* bones have provided the chronological interval of 5550–5380 cal BCE for layer 1b (Mazzucco, 2018). Early dates associated with the occupation of farmer and herder groups have been recently obtained as well at Cueva Lobrica in the National Park of Ordesa and Monte Perdido. The site is located in the Añisclo canyon and is characterised by a very complicated access. Fragments of Impressed Ware and charcoal from a hearth identified in the test pit excavated in the interior of the cave have been dated to 5470–5327 cal BCE (Clemente, Rey, & Gassiot, 2020) (Figure 4). This data suggests that since at least half of the sixth-millennium cal BCE, Neolithic groups, bearing pottery and domesticated animals and cereals, occupied both the outer and interior sectors of the Pyrenees.

This settlement pattern would continue in the following centuries. Several caves located in the Montsec range, one of the outer ranges that form the pre-Pyrenees, are occupied during the last centuries of the sixth millennium and the first centuries of the fifth, for example, Cova del Parco, Cova Colomera and Cova Gran, dated, respectively, between 5240 and 4940 cal BCE (Petit, 1996), 5250 and 5010 cal BCE (Oms et al., 2013) and 5045 and 4790 cal BCE (Mora et al., 2011). Simultaneously, large cavities in the interior ranges of the Pyrenees at altitudes around 1,500 m a.s.l. were occupied. This is the case of Coro Trasito, Puyascada and Cova de Els Trocs.

Coro Trasito is a large cavity located on the southern slope of the Sierra de Tucas on the eastern margin of Monte Perdido (Figure 5). Its excavation began in 2013 revealing some layers dated to the Early Neolithic and Bronze Age (Clemente et al., 2016, 2020). During the entire Early Neolithic, between *ca.* 5300 and 4400 cal BCE, the cavity was used for animal penning, as well as a storing area and dwelling space. The use

Table 2: List of 14C dates cited in the text. Calibration curve used: INTCAL13

Basin	Site	Layer/Context	Method	Material	Lab code	BP	(+/−)	cal AC (2σ)		Reference
Gállego	Esplugón	3 sup/3	AMS	Bone	Beta-313517	6730	40	5720	5564	Utrilla et al., 2016
	Esplugón	3 inf	AMS	Bone	Beta-306723	6950	50	5975	5730	Utrilla et al., 2016
	Esplugón	Pit with pottery at 167 cm	AMS	Bone	Beta-283899	6120	40	5209	4944	Utrilla et al., 2016
	Esplugón	2	AMS	Bone	Beta-338509	5970	30	4945	4730	Utrilla et al., 2016
Cinca	Coro Trasito	Layer 3013 base, Test pit	AMS	*Tritticum* sp.	CNA-2944.1.1	6269	33	5319	5077	Clemente et al., 2020
	Coro Trasito	Layer B-2B1	AMS	Acorn	Beta-512244	6190	30	5286	5039	Clemente et al., 2020
	Coro Trasito	Layer 3013, Test pit	AMS	Bone	Beta-366546	6150	40	5215	4960	Clemente et al., 2020
	Coro Trasito	Layer 3010, Test pit	AMS	*Corylus avellana* (seed)	Beta-358571	5990	40	4996	4784	Clemente et al., 2020
	Coro Trasito	Layer 3006 base, Test pit	AMS	*Hordeum vulgare* var. *nudum*	ETH-88905	5928	75	5000	4611	Clemente et al., 2020
	Coro Trasito	Layer 3002, Test pit	AMS	*Corylus avellana* (seed)	CNA-2520.1.1	5830	35	4791	4555	Clemente et al., 2020
	Coro Trasito	Storage pit A-3B19	AMS	*Corylus avellana* (seed)	Beta-491700	5700	30	4653	4452	Clemente et al., 2020
	Coro Trasito	Layer 3005-inferior	AMS	*Corylus avellana* (seed)	ETH-88906	5609	25	4496	4358	Clemente et al., 2020
	Cueva Lobrica	Hearth,Test pit 2	AMS	Wood charcoal	CL2015-4611.1.1	6410	35	5474	5316	Clemente et al., 2020
	Puyascada	Test pit 1, layer 1	Conventional	Wood charcoal	CSIC-384	5930	60	4988	4683	Baldellou, 1987
	Puyascada	Test pit 3, layer 2b	Conventional	Wood charcoal	CSIC-382	5580	70	4583	4264	Baldellou, 1987
	Puyascada	Test pit 3, layer 2b	Conventional	Wood charcoal	CSIC-383	4560	80	3522	3020	Baldellou, 1987
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrN-12685	6770	70	5802	5554	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrN-12683	6650	80	5715	5476	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	AMS	*Ovis aries*	GrA-38022	6580	35	5617	5477	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrA-34258	6530	40	5612	5381	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrN-13604	6490	40	5534	5363	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	AMS	*Ovis aries*	UCIAMS-66317	6470	25	5480	5375	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	CSIC-378	6460	70	5604	5230	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrA-34257	6410	40	5475	5314	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b silos	AMS	*Corylus avellana*	GrA-28341	6380	40	5474	5223	

(*Continued*)

Table 2: *Continued*

Basin	Site	Layer/Context	Method	Material	Lab code	BP	(+/−)	cal AC (2σ)		Reference
										Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrA-34256	6335	40	5463	5215	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b	Conventional	Wood charcoal	GrN-13602	6330	90	5477	5061	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	Conventional	Wood charcoal	GrN-13605	6330	70	5475	5078	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	Conventional	Wood charcoal	GrN-13603	6260	100	5473	4958	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	AMS	Human bone	CSIC-379	6230	70	5356	4997	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	AMS	Human bone	GrA-26912	6230	45	5308	5051	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	AMS	Human bone	MAMS-28127	6227	28	5302	5061	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1a	AMS	Human bone	D-AMS15831	6180	54	5302	4991	Utrilla & Laborda-Lorente, 2018
	Cueva de Chaves	1b int	Conventional	Wood charcoal	CSIC-381	6120	70	5284	4846	Utrilla & Laborda-Lorente, 2018
Ésera	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16163	6285	25	5312	5213	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16159	6280	25	5312	5212	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16164	6249	25	5308	5073	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16168	6249	28	5309	5073	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16166	6234	28	5304	5065	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16162	6218	24	5298	5059	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Human bone	Mams - 16161	6217	25	5298	5057	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Seed	Beta - 316512	6080	40	5206	4846	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Seed	Beta - 284150	6070	40	5205	4843	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Bone	Beta - 295782	6060	40	5203	4841	Rojo et al., 2013
	Els Trocs	Els Trocs I	AMS	Seed	Beta - 316514	6050	40	5201	4837	Rojo et al., 2013
	Cueva del Moro de Olvena	Ov. 2 intacto	Conventional	Wood charcoal	GrN-12119	6550	130	5719	5223	Baldellou & Utrilla, 1985
	Forcas II	Layer Ib	AMS	Wood charcoal	Beta/CAMS-59997/5354	8650	70	7942	7548	Utrilla & Mazo, 2014

(*Continued*)

Table 2: *Continued*

Basin	Site	Layer/Context	Method	Material	Lab code	BP	(+/−)	cal AC (2σ)		Reference
	Forcas II	Layer II	Conventional	Wood charcoal	GrN-22686	7240	40	6221	6022	Utrilla & Mazo, 2014
	Forcas II	Layer II	AMS	Animal bone	Beta-250944	7150	40	6076	5921	Utrilla & Mazo, 2014
	Forcas II	Layer II	Conventional	Wood charcoal	Beta-59995	7090	30	6026	5893	Utrilla & Mazo, 2014
	Forcas II	Layer IV	AMS	Human bone	Beta-290932	7000	40	5985	5774	Utrilla & Mazo, 2014
	Forcas II	Layer V	Conventional	Wood charcoal	GrN-22687	6970	130	6068	5632	Utrilla & Mazo, 2014
	Forcas II	Layer V	Conventional	Wood charcoal	Beta-60773	6940	40	5968	5729	Utrilla & Mazo, 2014
	Forcas II	Layer VI	Conventional	Wood charcoal	GrN-22688	6900	45	5892	5671	Utrilla & Mazo, 2014
	Forcas II	Layer V	AMS	Animal bone	Beta-247404	6750	40	5723	5571	Utrilla & Mazo, 2014
	Forcas II	Layer VI	AMS	Animal bone	Beta-247405	6740	40	5723	5566	Utrilla & Mazo, 2014
	Forcas II	Layer VIII	Conventional	Wood charcoal	GrN-22689	6680	190	5984	5225	Utrilla & Mazo, 2014
	Forcas II	Layer 9	Conventional	Wood charcoal	Beta-59998	6090	180	5470	4555	Utrilla & Mazo, 2014
Noguera Ribagorçana	Cova del Sardo	A-9A2	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-37689	6525	45	5607	5375	Gassiot et al., 2015
	Cova del Sardo	A-8B1	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-37690	5850	40	4834	4556	Gassiot et al., 2015
	Cova del Sardo	A-8A2	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-40878	5715	35	4678	4456	Gassiot et al., 2015
	Cova del Sardo	A-8A2	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-36935	5695	35	4672	4448	Gassiot et al., 2015
	Cova del Sardo	A-8B2	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA- 40817	5685	35	4652	4407	Gassiot et al., 2015
	Cova del Sardo	A-8A6	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-41134	5645	25	4542	4371	Gassiot et al., 2015
	Cova del Sardo	A-8A4	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-40815	*5635*	35	4542	4363	Gassiot et al., 2015
	Cova Colomera	EC-1 CV10	AMS	*Buxus* sp.	Beta-279478	6180	40	5286	5003	Oms et al., 2013
	Cova Colomera	CE1 4	AMS	*Tritticum* a/d	OxA-23634	6170	30	5214	5015	Oms et al., 2013
	Cova Colomera	CE1 3–14	AMS	*Tritticum* a/d	Beta-240551	6150	40	5215	4960	Oms, 2008
	Cova Colomera	CE1 2	AMS	*Buxus* sp.	Beta-248523	6020	30	4999	4803	Oms, 2008
Noguera Pallaresa	Obagues de Ratera	13B2	AMS	*Pinus* tipus *sylvestris/ uncinata*	CNA-4629.1.1	8800	40	8178	7660	Gassiot et al., 2020
	Obagues de Ratera	11B2	AMS	*Pinus* tipus *sylvestris/ uncinata*	CNA-4630.1.1	6800	35	5735	5631	Gassiot et al., 2020
	Estany de la Coveta I	2A9	AMS	*Pinus* tipus *sylvestris/ uncinata*	Charcoal	7845	45	7025	6538	Gassiot, 2016

(*Continued*)

Table 2: *Continued*

Basin	Site	Layer/Context	Method	Material	Lab code	BP	(+/−)	cal AC (2σ)		Reference
	Dolmen Font dels Coms	DA-5A1	AMS	*Pinus* tipus *sylvestris/ uncinata*	KIA-23142	9375	35	8750	8552	Gassiot, 2016
Valira	Camp del Comoler	Pit FS 29, UE 222	AMS	*Hordeum*	Beta-325686	5600	40	4532	4350	Fortó & Vidal, 2016
	Camp del Comoler	EI 12, UE 245	AMS	*Corylus* (seed)	CNA-2257.1.1	5630	35	4540	4362	Fortó & Vidal, 2016
	Camp del Comoler	Pit SJ 24, UE 193	AMS	*Hordeum*	Beta-325684	5350	40	4327	4051	Fortó & Vidal, 2016
	Camp del Comoler	Pit EI 11, FS 15, UE 144	AMS	*Corylus* (seed)	Beta-325685	5300	30	4241	4001	Fortó & Vidal, 2016
	Camp del Comoler	SJ 7, UE 127	AMS	*Hordeum*	CNA-2256.1.1	5205	35	4217	3954	Fortó & Vidal, 2016
	Orris de la Torbera de Perafita I	Hut P009107	AMS	Wood charcoal	Poz-22583	9360	50	8771	8468	Orengo et al., 2014
	Orris de la Torbera de Perafita I	Hut P009	AMS	Wood charcoal	Beta-285100	6570	40	5617	5475	Orengo et al., 2014
	Balma Margineda	Layer 4 base	Conventional	Wood charcoal	Ly-4401	8970	120	8530	7733	Guilaine & Martzluff, 1995
	Balma Margineda	Layer 5/4	Conventional	Wood charcoal	Ly-3892	8850	120	8257	7607	Guilaine & Martzluff, 1995
	Balma Margineda	Layer 5/4	AMS	Leguminosae/Fabaceae	Beta-325683	8600	40	7732	7544	Martins et al., 2015
	Balma Margineda	Layer 4	Conventional	Wood charcoal	Ly-2840	8390	150	7730	7058	Guilaine & Martzluff, 1995
	Balma Margineda	Layer 4,superior	Conventional	Wood charcoal	Ly-3291	8210	180	7582	6699	Guilaine & Martzluff, 1995
	Balma Margineda	Layer 3a	AMS	*Triticum*	Beta-398959	2520	30	789	544	Manen et al., 2019
	Balma Margineda	Layer 3b	AMS	*Hordeum*	Beta-398960	6690	30	5666	5537	Manen et al., 2019
	Balma Margineda	Layer 3a	AMS	*Corylus*	Beta-325681	6630	40	5625	5482	Manen et al., 2019
	Balma Margineda	Layer 3b	AMS	*Corylus*	Beta-325682	6410	40	5475	5314	Manen et al., 2019
	Balma Margineda	C3f	AMS	*Capra pyrenaica*	CNA-2682.1.1	7401	37	6395	6092	Oms et al., 2016
	Balma Margineda	C3/C4	Conventional	Wood charcoal	LY 3290	6870	170	6061	5482	Guilaine & Martzluff, 1995
	Balma Margineda	C3b-F3	Conventional	Wood charcoal	LY 3289	6850	150	6016	5483	Guilaine & Martzluff, 1995
	Balma Margineda	C3b base -F3(base)	Conventional	Wood charcoal	LY 2839	6670	120	5801	5374	Guilaine & Martluff, 1995
	Balma Margineda	C3a-F1	Conventional	Wood charcoal	LY 3288	6640	160	5885	5226	Guilaine & Martluff, 1995
	Balma Margineda	C3a-F1	AMS	*Corylus avellana*	Beta-325681	6630	30	5624	5483	Oms et al., 2016
	Balma Margineda	C3b	AMS	*Corylus avellana*	Beta-325682	6410	40	5475	5314	Oms et al., 2016
	Balma Margineda	C3F	AMS	*Ovis/Capra*	CNA-2681.1.1	6083	38	5207	4847	Oms et al., 2016
	Balma Margineda	C3a	AMS	*Ovis/Capra*	CNA-2679.1.1	5850	35	4798	4608	Oms et al., 2016
Segre	Pla de l'Orri	Cab 128	AMS	Wood charcoal	Poz 10902	6550	40	5617	5390	Mercadal, 2021
	Cova Gran	CG-3N-E9	AMS	*Quercus* (seed)	Beta-265982	6020	50	5197	4788	Mora et al., 2011
	Cova Gran	CG ANALIT 57	AMS	*Corylus* (seed)	Beta 305465	5850	40	4834	4556	Polo, Martínez-Moreno, Benito, & Mora, 2014
	Cova del Parco	Estrat III	Conventional	Bone	CSIC-280	6450	230	5830	4847	Petit, 1996

(*Continued*)

Table 2: *Continued*

Basin	Site	Layer/Context	Method	Material	Lab code	BP	(+/−)	cal AC (2σ)		Reference
	Cova del Parco	Estrat III	Conventional	Wood charcoal	CSIC-281	6170	70	5306	4938	Petit, 1996
	Cova del Parco	Estrat III	Conventional	Wood charcoal	GrN-20058	6120	90	5301	4801	Petit, 1996
	Cova del Parco	Estrat III	Conventional	Wood charcoal	CSIC-403	5970	60	5001	4716	Petit, 1996
	Cova del Parco	Estrat III	Conventional	Bone	CSIC-279	5790	170	5203	4275	Petit, 1996
Llobregat	Font del Ros	Horizonte SG	Conventional	Wood charcoal	UBAR-345	8800	360	9120	7059	Pallarés et al., 1997
	Font del Ros	Horizonte SG	AMS	*Corylus* (seed)	Beta-210732	8690	90	8171	7550	Martínez, Mora, & Casanova, 2007
	Font del Ros	Horizonte SG	Conventional	Wood charcoal	UBAR-397	8400	180	7951	6841	Pallarés et al., 1997
	Font del Ros	Horizonte SG	Conventional	Wood charcoal	UBAR-329	8270	200	7709	6655	Terradas et al., 1992
	Font del Ros	Horizonte SG	Conventional	Wood charcoal	UBAR-185	8050	150	7460	6600	Pallarés et al., 1997
	Font del Ros	Horizonte SG	AMS	*Corylus* (seed)	Beta-210733	7800	50	6771	6476	Martínez et al., 2007
	Font del Ros	Horizonte N	AMS	Wood charcoal	AA-16498	6561	56	5622	5385	Pallarés et al., 1997
	Font del Ros	E.15	AMS	*Corylus* (seed)	AA16499	6443	56	5517	5308	Pallarés et al., 1997
	Font del Ros	E.36	AMS	*Corylus* (seed)	AA16502	6370	57	5474	5218	Pallarés et al., 1997
	Font del Ros	E.33	AMS	*Corylus* (seed)	AA16501	6307	68	5471	5065	Pallarés et al., 1997
	Font del Ros	E.21	AMS	*Corylus* (seed)	AA16500	6058	79	5211	4788	Pallarés et al., 1997

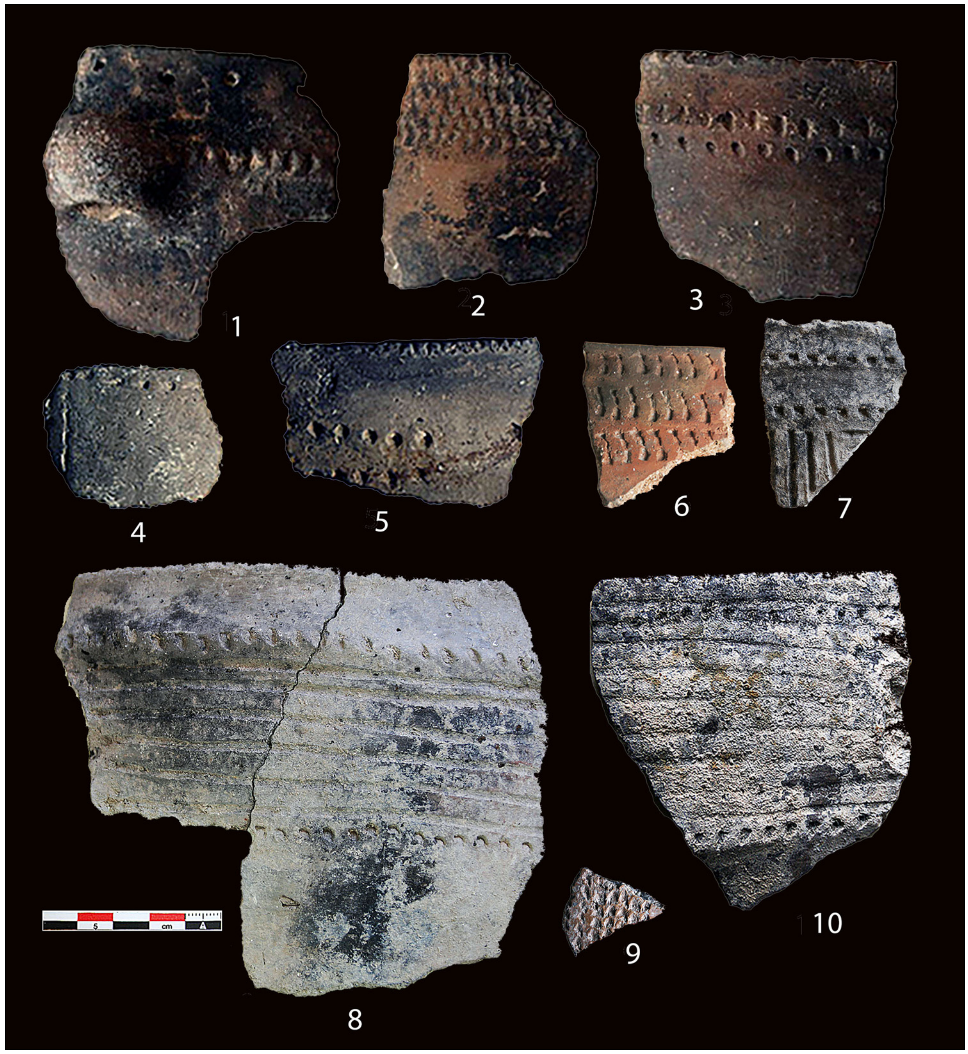

Figure 4: Examples of decorated pottery sherds from the Early Neolithic of (1–5) Cueva Lobrica (Fanlo/Sobrarbe/Huesca) and (6–10) Coro Trasito (Tella-Sin/Sobrarbe/Huesca).

of the cave for animal penning represents the first phase of occupation. It has produced a package with *fumier* deposits with layers that suggest a deposition ratio of 1 mm/year. After that, around *ca.* 4800 cal BCE, several hearths have been detected, associated with abundant remains of the consumption of domesticated fauna and a rich material assemblage. Around *ca.* 4500–4400 cal BCE, more than twenty pit structures/silos with capacities between 20 and 40 L were excavated into the soil. During the entire Neolithic sequence, domesticated animals dominated the faunal assemblage including not only sheep/goats but also cattle and pigs.

Cultivars are also present in the carpological record at Coro Trasito reaching 40% or even 60% in some samples. Naked barley (*Hordeum vulgare* var. *nudum*) is the most abundant crop although naked wheat (*Triticum aestivum s.l./durum* Desf./*turgidum* L.) is also important (Antolín, Navarrete, Saña, Viñerta, & Gassiot, 2018; Obea et al., in press). Both grain and chaff from all different species have been identified together with some potential field weeds such as *Bromus* sp., *Polygonum convolvulus, Galium aparine* and *Chenopodium* sp. (Antolín et al., 2018). Cereals are also well represented in the pollen record (up to 50% from 4788 to 4590 cal BCE onwards) (Obea et al., in press) suggesting the existence of crop fields not far from the cave.

Pottery is an abundant and widely used material throughout the time period. Many pieces have thick walls and large volumes. A part of the crockery would have been used to store cereals and other foods,

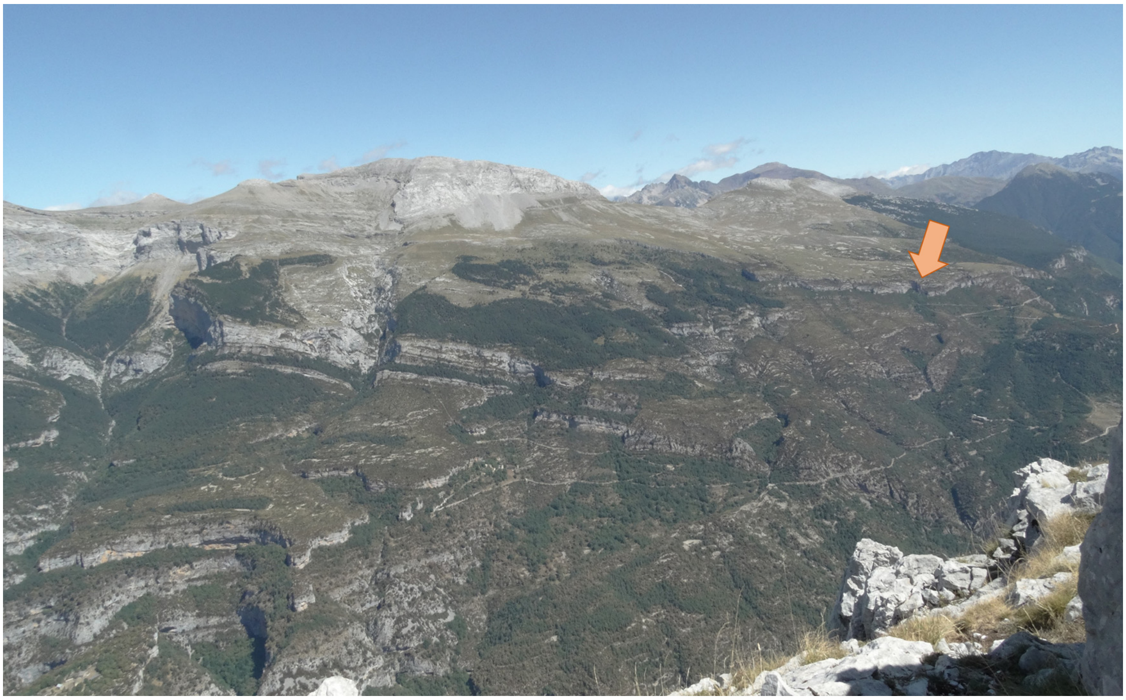

Figure 5: General view of the southern slope of the Sierra de Tucas. The arrow points to the cave of Coro Trasito.

as well as other culinary uses (Díaz-Bonilla, 2016). In addition, the presence of tools related to ceramic production (i.e. pottery spatula, stone burnishers) indicates that several crafting activities were carried out on site (Clemente et al., 2016).

On the other hand, among the lithic tools recovered at Coro Trasito, grinding stones and blades used for cereal harvesting have been documented. In the latter, the mowing activity is reflected on the surfaces of the tools in the form of an intense, shiny polish, with a very compact weave, accompanied by depressions and grooves which are deeply set on both sides of the blade and follow an orientation parallel to the blade itself (Clemente & Mazzucco, in press).

Els Trocs cave is located further east, near Macizo del Turbón (Rojo et al., 2013). The first phase of occupation, Trocs I, is dated between 5050 and 4930 cal BCE, based on samples from charred cereal caryopsis and domesticated fauna (Mazzucco, 2018; Rojo et al., 2013). Nevertheless, sparse human remains found within the cave have been dated to a few centuries earlier, between 5310 and 5080 cal BCE (Alt et al., 2020). During this phase, several combustion areas were created, and afterwards, a series of pavements made of stone and pottery fragments were made probably to drain the cave floor (Lancelotti et al., 2014). The successive phase, Trocs II, is dated between 4450 and 4380 cal BCE with the creation of a new stone paved surface, on which large combustion areas have been found, probably a result of repeated, seasonal occupations. Overall, Els Trocs attests to the presence of a farming community in the interior ranges of the Pyrenees, with a specialisation towards the exploitation of domestic caprines (Rojo et al., 2013; Tejedor-Rodríguez et al., 2021).

The occupation of higher altitudes appears to have begun only slightly later, starting from *ca*. 4800 to 4450 cal BCE, as well attested from Phase 8 of the Cova del Sardo, a rock shelter located near the bottom of the alpine Sant Nicolau Valley (Gassiot et al., 2015). In this case, the occupation of the rock shelter does not suggest a stable and prolonged occupation, as it seems possible for sites such as Coro Trasito but a series of repeated, brief and seasonal occupations. Hunting was carried out locally as documented by use-wear analysis of the lithic record (Mazzucco et al., 2019) and ruminants were cooked into pottery vessels as attested by lipid analysis (Tarifa, 2019). The presence of a charred caryopsis of barley also indicates the local consumption of cereals (Gassiot et al., 2014). The pollen record obtained from the site suggests that the environment surrounding the rock shelter was rather open with evidence of anthropic disturbances (Gassiot, Rodríguez-Antón, Burjachs, Antolín, & Ballesteros, 2012). An off-site survey realised in the Sant Nicolau valley bottom, at about 560 m from the Sardo cave, confirmed the presence of a paleo-surface dated to 5050–4850 cal BCE which contains a relevant assemblage of phytoliths, microcharcoal and organic matter. All of this indicates an anthropic disturbance, related to a fire-induced opening of the vegetation cover and the presence of grazing animals (Rodríguez-Antón, 2020).

The new data obtained from recent excavations and survey allows a clearer picture of the Neolithisation process of the Pyrenean area to be drawn. The first farming communities occupied almost simultaneously both the outer and inner areas of the Pyrenees, including the valley bottoms but also the mid-slope areas. This process might have begun as early as *ca.* 5400 cal BCE, despite a more intense occupation being visible only from *ca.* 5300 to 5000 cal BCE (Table 2). During this period, in the Middle Holocene, arboreal vegetation was dominated by a mixed coniferous forest consisting of a mixture of broadleaf trees and conifers (Catalan et al., 2013; Cunill, Soriano, Bal, Pèlachs, & Pérez-Obiol, 2013; Garcés-Pastor et al., 2017). Traces of a local deforestation with an opening of the vegetation and presence of species associated with an anthropic disturbance can be detected in Coro Trasito, Els Trocs and Cova del Sardo sites, suggesting that local grazing, and possibly at least in some cases, cultivation activities were carried out (Gassiot et al., 2012; Rodríguez-Antón, 2020; Uría, 2013). The occupation of the subalpine and alpine belt would begin only a few centuries later in respect to the pre-Pyrenean area. At higher altitudes, the presence of groups bearing mixed farming is documented starting from *ca.* 4800 cal BCE. Environmental proxies suggest an increase in anthropic pressure over the subalpine environment with human-induced fires and vegetation clearance (Bal, Rendu, Ruas, & Campmajo, 2010; Galop, 2006; Garcés-Pastor et al., 2017; Gassiot et al., 2014; Miras et al., 2010; Pèlachs et al., 2011; Vannière, Galop, Rendu, & Davasse, 2001).

3 Discussion: The Neolithisation of the Pyrenees Under a New Light

The archaeological record today available for the Pyrenees is showing a more complex scenario than expected 15 or 20 years ago. Despite the fact that archaeological data is still fragmentary and the number of excavated sites still low, the available information has enormously increased for both the Mesolithic and Neolithic periods. All considered, recent investigations are demonstrating that mountain areas are not marginal but were populated since prehistoric times.

Central Pyrenees were occupied and inhabited by human communities almost since the beginning of the Holocene at all altitudinal stages. This implies that the inner mountainous areas were also exploited and crossed. Hunting probably played a major role and especially the larger caves located in the outer areas of the Pyrenees attest a well-developed hunting economy based on wild ungulates (Utrilla & Mazo, 2014). hunter–gatherers were still circulating in the Pyrenees and pre-Pyrenees just before the arrival of the first farming communities, as attested by the recent dates of Forcas II (layer VI, 5985–5774 cal BCE; layer V, 5723–5571 cal BCE,), Esplugón (layer 3sup, 5975–5730 cal BCE; layer 3inf, 5720–5564 cal BCE,), or Obagues de Ratera (phase 11, 5732–5638 cal BCE) (Table 2). The chronological proximity between them is even more evident, if we consider the new dates on charred caryopsis from Balma de la Margineda, which place the arrival of the first Neolithic groups already around the 5635–5550 cal BCE (Manen et al., 2019). Even if the data is still not detailed and abundant enough to understand how the process of Neolithisation took place, it seems clear that the Pyrenees might have played a more active role than previously thought. The presence of ‘mixed’ contexts, with horizons characterised by a typical hunter–gatherer economy and material culture, but including ‘Neolithic innovations’ such as pottery, sickle blades and *doble bisel* segments remains complicated to be explicated. Some authors have sought in this type of context the proof of contact and interaction between Mesolithic and Neolithic groups during the early stages of Neolithisation (García-Martínez de Lagrán, 2014; Utrilla et al., 2016); however, the extension and the modalities in which such interaction took place are not clear and hard to be defined based on the current archaeological record. How and exactly when were such innovations absorbed? How may the taphonomical and postdepositional processes affect the integrity of these mixed archaeological assemblages? At the current state of research, these questions remain unsolved and a deeper revision of the material record is needed.

We can also wonder whether mountain areas can be regarded as a sort of refuge for the last hunter–gatherer populations. This hypothesis seems unlikely, as continuity or, at least, interactions between the Mesolithic and the Early Neolithic have been attested also south of the Pyrenees, in the confluence of the Ebro River with the Segre River, for example at the sites of Botiqueria (Barandiaran & Cava, 2000), Costalena (Barandiarán & Cava, 1985) and Valmayor XI (Rojo et al., 2015a). In addition, the uneven and sparse distribution of the occupation connected with the last groups of hunter–gatherers makes it difficult to define exactly the pattern of land exploitation (Martínez et al., 2007; Mazzucco, Clemente, Gassiot, & Rodríguez Antón, 2016). In high-altitude areas, evidence of Mesolithic occupation chronology is often so ephemeral and the material record so scarce that is very hard to define the palaeoeconomic aspects. In this sense, the Obagues de Ratera rock shelter surely represents one of the most promising sites to understand the exploitation of for high-altitude areas.

Recent data also suggest that the process of the Neolithisation of the Pyrenees is earlier than previously thought. Starting from the second half of the sixth millennium, all the area began to be increasingly inhabited by communities practising a mixed farming economy. Evidence from Balma Margineda, Coro Trasito, Cueva Lobrica and Els Trocs are demonstrating that Neolithic communities were penetrating the inner parts of the mountain range, occupying both the valley bottoms and middle slopes, since *ca.* 5500–5300 cal BCE. In addition, not only mountain areas were occupied for pasture exploitation and development of herding activities but also a more complex scenario seems to be occurring. If, for example, the occupation of Els Trocs seems strictly associated with the seasonal exploitation of domestic caprines, the site Coro Trasito reflects a broader economic spectrum, including not only sheep/goat herding but also cattle and pigs husbandry, dairy products and cereal consumption (Antolín et al., 2018; Clemente & Mazzucco, in press).

The possible existence of cereal crops near Coro Trasito is a question under discussion that challenges many perspectives on the human occupation of mountain areas during the Early Neolithic. Some evidence leads us to support this hypothesis. Several storage pits were found suggesting that food storage was also important (Gassiot et al., 2018). The lithic tools recovered show the processing of cereal, both in harvesting and grinding (Clemente & Mazzucco, in press). The abundance of cereal grains, together with the presence of adventitious plants in an area of dense forest, suggests the existence of small crop fields close to the shelter that must have helped to sustain the people who occupied it. Different evidence supports this possibility: high pollens values, both cereal and adventitious plants, the remains of chaff both from free-threshing and non-free-threshing cereals, and the cereal carpological record that follows different processing steps for consumption (Hillman, 1984, 1985). These are an indication of the manipulation of cereal remains inside or nearby the cave (Antolín et al., 2018; Obea et al., in press). Signs of a diversified economy, a wide range of tools, e.g., grinding stones and sickles, and storage pits suggest that Coro Trasito might have acted as a rather stable occupation, almost all year round and not a specialised, seasonal site.

Furthermore, the analysis of the geographical position of the sites suggests that Early Neolithic populations settled in environments that were adapted to a diverse economy, including herding as well other practices. While during the Mesolithic and Late Neolithic, the occupation of the high-altitude areas not favourable to cultivation was more important, a recent GIS-based modelling suggests that Early Neolithic sites were located at a maximum distance of 40 min from potentially cultivable fields (Gassiot et al., 2021). This suggests that herding and farming practices were possibly strictly related to the mountainous areas. This is, for example, the case at Coro Trasito and other sites such as Cova del Sardo. Despite Cova del Sardo not providing any clear evidence of a local cultivation (only one charred caryopsis has been recovered and the cereal pollen has not been identified in the site sequence), cultivated fields might not have been located too far away from the site, as potentially cultivated areas were easily accessible in the surrounding lands. The occupation of valley bottom and mid-slopes at the beginning of the Neolithic might be interpreted in this sense: farming groups preferred the occupation of areas from which a different set of resources were easily accessible, both for grazing and crop cultivation. The expansion towards the alpine belt would take place only later, during the Late Neolithic, *ca*. 3500–3000 cal BCE, in association with a greater human impact on the vegetation cover, with forest clearance and the expansion of pasture areas (Garcés-Pastor et al., 2017; Gassiot et al., 2014, 2017; Miras et al., 2010; Pèlachs et al., 2011; Rendu, 2003).

4 Conclusion

During the last years, the understanding of the Neolithic of the western Mediterranean has experienced great changes. The study of marginal areas such as the mountainous zone of the Pyrenees and the Alps has brought new and important data about the dynamics of Neolithisation with a special focus on the economic and environmental sphere. This is the case of the southern central Pyrenees, a zone in which during the last 10 years a considerable number of new excavations and survey programs have been carried out. Nowadays, the presence of sites in the inner sector of the Pyrenees such as Balma de la Margineda is no longer surprising. These sites should be interpreted as part of a broader process of occupation of the mountainous spaces which started as soon as the Neolithic reached the northeast of the Iberian Peninsula. Recent data suggest that the last Mesolithic hunter–gatherer occupied all the altitudinal stages of the Pyrenees both in the outer and inner ranges. A change in the settlement pattern would occur with the Early Neolithic, in which the occupation is focused on the valley bottom and mid-slopes, in biotopes favourable to both herding and agriculture. In this sense, the traditional dichotomy between mountain areas being exclusively specialised in herding practices and lowlands having a mixed economy vocation is not any longer valid. The presence of sites such as Coro Trasito suggests that mountain spaces were exploited with a varied economic strategy since the early phases of the Neolithic. In the future, the study of mountain spaces and the excavation of new sites will allow us to draw a clearer picture of the Neolithisation process in the area, and as well to reveal relevant dynamics for the understanding of the development of the Neolithic of the north-east Iberian Peninsula.

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