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Humanizing the western Cantabrian Mountains in northwestern Iberia: A diachronic perspective on the exploitation of the uplands during Late Prehistory

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For too long upland areas such as the Cantabrian Mountains in northwestern Iberia have been regarded as Europe's last "natural landscapes" and conceptualized as pristine areas where human impact is barely noticeable. From this perspective, mountains are mainly considered as a refuge for nature, while urbanized or industrialized areas in plains or coastal zones appear as their opposites. Lowlands are perceived as the arenas for the maximum development of culture and civilization. In contrast, uplands are often viewed as "marginal" landscapes, like deserts or wetlands, where wildness and barbarism predominate.

Widely held by the general public, this view has also impacted the way archaeological research has engaged with mountain environments. Most of the traditional narratives in our discipline assumed that historical and cultural processes reach the uplands only in limited and subtle ways (Walsh et al., 2006). The majority of European archaeological investigations have focused their attention on "central" areas (those with gentler topography and more monumental architecture or outstanding material culture). Therefore, the biographies of mountainous landscapes are not so well understood in diachronic terms. General narratives built mainly in the lowlands were extended to upland areas mediated only by assumptions about the latter's supposed marginality. Mountains remained out of broad archaeological discussions, except when considered as mere "borders" of cultural areas or human groups, following historical-cultural approaches. However, discussing the archaeological evidence from the Cantabrian Mountains in a close dialogue with paleoenvironmental and ethnographic datasets allow us to draw a more detailed picture of the biographies of alpine and subalpine landscapes.

On the other hand, since mountainous areas were not— in general— as affected as urban areas by contemporary transformative processes like industrialization, European uplands got the attention of ethnographers and anthropologists who studied "traditional" and sustainable local communities' ways of life. Ethnographic analogies shaped a broad view of the conservative cultures of mountain communities, which came to predominate historical and archaeological narratives. These narratives easily fall into presentism and atemporality.

Nevertheless, mountain landscapes in Europe are in fact mostly a result of cumulative long-term human interactions with the environment and human groups throughout history have exploited even the more remote upland areas on the continent. Upland landscapes constitute palimpsests that archaeologists are able to read. For example, paleoenvironmental and geomorphological studies carried out at upland peat bogs and mountain lakes prove the pre-eminent role of

anthropogenic agents in the transformation of these landscapes throughout the last few millennia (López-Sáez et al., 2006; Miras et al., 2007; Mocci et al., 2008). Moreover, recent archaeological research in mountain ranges such as the Pyrenees (Gassiot et al., 2017; Palet et al., 2007; Rendu, 2003) or the Alps (Carrer, 2013; Walsh et al., 2007) is proving the dynamism of these areas early in Late Prehistory. However, there are still mountain areas, such as the Cantabrian Mountains, which are archaeologically underexplored. The current project explores the potential for archaeological and ethnoarchaeological research in the área (González-Álvarez, 2016; González-Álvarez et al., 2016).

Aims

This paper provides an archaeological account of the anthropization processes in the western sector of the Cantabrian Mountains (Northern Iberia) during the five millennia between the emergence of agriculture and animal domestication (ca. 4800 BC) and the Roman conquest of the área (late first century BC) (Fano et al., 2015; López-Merino et al., 2010; Costa-García, 2018). Historical Ecology (Armstrong et al., 2017; Crumley, 1987, 1994) and landscape archaeology (Criado, 1999; David and Thomas, 2008) provide the theoretical framework for exploring the available archaeological and paleoenvironmental datasets for this region and support a diachronic interpretation of its cultural landscapes. Rather than focusing on single events or sudden changes, Historical Ecology, developed by authors such as Carole Crumley (1987, 1994), analyzes gradual transformations and cumulative continuities in order to unveil the cultural factors shaping relationships between societies and their surrounding environs. Using archaeological data, I study the settlement patterns and subsistence systems deployed by local communities in the Cantabrian Mountains and I compare these with available paleoenvironmental datasets.

Such a comparison helps assess human's environmental impact on the uplands, but distinguishing between natural and anthropogenic changes in the landscape is sometimes very difficult (Marignani et al., 2017). Ethnographic accounts of the traditional exploitation of upland areas, in the Cantabrian Mountains and elsewhere, do provide analogies that can assist archaeological interpretations of human agency in such dramatic environs. In light of the data considered, this paper also reflects on the cultural and social processes involved in the domestication of the upland landscapes particularly during Late Prehistory.

The Cantabrian Mountains

The Cantabrian Mountains (*Cordillera Cantábrica*) are located in the Northwest of the Iberian Peninsula. This mountain range runs parallel to the coast with its maximum altitude at 2648 MASL (meters above sea level) in La Torre Cerréu, at the border between Asturias and León.

The northern slopes are very close to the Atlantic Ocean, while the southern slopes face the plains of Central Iberia with an elevation of around 900–1,000 MASL. An outstanding geographical unit, the mountains both limited and enabled communication between different regions of northwestern Iberia. On the one hand, the complex topography, the high altitudes and the extreme weather conditions during winter complicated human movement across the mountains. On the other hand, the importance of seasonal grasslands in the uplands attracted shepherds from both sides of the mountain range to graze their herds for part of the year (González-Álvarez et al., 2016) and these movements enhanced cultural, social and commercial interactions (Vázquez-Varela, 2001).

Villages in these mountains are now located mid-slope in the northern valleys of Asturias (García-Fernández, 1988), while on the southern slopes of León they occupy the bottom of much wider and higher valleys (Gómez-Gómez, 2006). Seasonal complementarity in the agrarian exploitation of both the lower sections of the valleys for agricultural purposes and the upland pastures for extensive pastoralism during the summer generated subsistence systems rooted in

vertical mobility, which have been developed since the Neolithic (de Blas, 2008b; Díez-Castillo, 1996–1997). However, the settlement patterns of the currently inhabited villages in these mountains can be dated back only to the Early Medieval period (Fernández-Fernández, 2017; Fernández-Mier, 2011; Gutiérrez-González, 1985), although there is evidence for peasant-inhabited open settlements in the Roman period (Fernández-Mier and González-Álvarez, 2013; Marín and González-Álvarez, 2011).

As noted above, the Cantabrian Mountains only recently become a focus of archaeological research concerning Late Prehistory and data is so far limited. The development of heritage inventories by regional governments, investigations on Megalithism (Arias et al., 1995; de Blas, 1997; Díez-Castillo, 1996-1997) and consideration of Prehistoric copper mining (de Blas, 2014) constitute the core of our knowledge. A few isolated finds (de Blas, 1983; Fernández-Manzano, 1996) and unexpected prehistoric discoveries resulting from historical archaeology projects (Camino and Estrada, 2012; Fernández-Mier et al., 2014) complete the existing data. Compiled, this information produces a broad but incomplete image that demands more archaeological research that incorporates perspectives from recent investigations in other European uplands. The evidence to date allows us to say the following about the various periods under investigation.

Mesolithic and Neolithic: the earliest anthropogenic impact in the uplands

While the presence of Mesolithic groups is much better known in coastal areas of Asturias and Cantabria (Fano, 2018), the Western Cantabrian Mountains were also visited by these hunter-gather groups, as is shown in the archaeological datasets from upland sites like the rock shelter of La Calvera in Cantabria (Díez-Castillo, 1996-1997:81–88), the caves of La Una and El Espertín in León (Neira et al., 2006) and the exceptional Mesolithic burials of La Braña-Arinteros in León (Vidal and Encina, 2010). Although Mesolithic groups did not produce a persistent footprint on the upland landscapes, a few early and discontinuous transformations in the vegetation cover have been revealed by some natural palynological deposits (Muñoz-Sobrino et al., 2005:384). These might be related to the minor anthropogenic impact produced by Mesolithic communities, but further archaeological research is needed to identify patterns in such evidence.

Around 6000 BP, agricultural and herding activities were introduced in northwestern Iberia by Neolithic communities (Fano et al., 2015). The persistent humanization of the Cantabrian Mountains began then (Cubas et al., 2016) with a slight delay in the uplands (Díez-Castillo, 1996-1997; González-Álvarez, *in press*). By contrast, dates for cereal cultivation in coastal areas or the lower valleys were earlier (López-Merino et al., 2010; Pena et al., 2005). The adoption of agriculture and herding activities required deforesting large tracks of land for pasturage and crops. This changed the relationships established by human groups with their surrounding environment and shaped some of the first detectable anthropogenic transformations of local landscapes.

Megalithism is one of the traces traditionally linked to the consolidation of the Neolithic in the study area (Arias et al., 1999; de Blas, 1997). The presence of Neolithic groups is materialized through megalithic burial mounds, which could be understood as anthropogenic modifications of the landscape itself (Scarre, 2002) and as a process of transforming “space” into “place” (Chapman, 1988). These monuments would act as topographic markers in the domestication of the landscape or distinguish non-agrarian sacred places and they may also be interpreted as communal signs for the links between the Neolithic communities and specific territories.

The location of these landmarks reveal some interesting aspects of the spatial grammar of Neolithic landscapes, since they are quite often related to mountain passes, natural routes or the most visually prominent points for movement across the uplands (Criado and Mañana,

2003). Also, many burial mounds are linked to seasonal pastures and suitable zones for establishing summer farms in the uplands. This pattern can be linked to the mobile strategies deployed by Neolithic shepherds who took advantage of the different biotopes that can be found within short distances of each other in the Cantabrian Mountains.

Unfortunately, archaeological evidence for Neolithic settlements is scarce, partly due to both successive geomorphological and anthropogenic processes that have hidden or even erased potential sites of this period. Dated to sometime in the fourth millennium BC and only recently explored, the domestic structures found in Las Corvas (Balmonte de Miranda, Asturias) appeared underneath almost two meters of agrarian sediments (González-Álvarez, *in press*).

Likewise, slope erosion revealed archaeological deposits of the 3rd millennium BC in the Torca'l Arroyu chasm (at Llanera in Asturias) coming from currently disappeared open air occupational layers in the surrounding area (Jordá-Pardo et al., 2007). Rescue archaeology and archaeological surveillance of forestry activities and of infrastructure development (such as wind farms, roads or pipelines) has been poorly integrated into management models in the area. Therefore, we have probably lost several opportunities to investigate late prehistoric sites in the study area beyond the more topographically obvious megalithic burial mounds (González-Álvarez, 2010). The already known occupational sites, such as Las Corvas or Peña Oviedo (Liébana, Cantabria), can be interpreted as recurrent points for the establishment of itinerant communities during the Neolithic. The occupation of these sites seems to be limited to a few years in relation to the decrease of soil productivity, after which the communities would move to other suitable locations nearby and reoccupy previously inhabited places, as we suspect at Las Corvas (González-Álvarez, *in press*). Taking advantage of landscape verticality, itinerant settlement patterns in the Cantabrian Mountains had a twofold mobility cycle related to long-term extensive agricultural strategies and seasonal movements to provide pasture for domesticated animals.

While the earliest evidence of cereal cultivation in coastal areas derives from the fifth millennium BC in the Monte Areo peat bog (at Xixón, Asturias) (López-Merino et al., 2010), palynological data from the Cantabrian Mountains show a much later spread of agriculture and herding activities. For example, anthropogenic manipulations of the landscapes in Asturias around the Molina peat bog at Salas (650 MASL) and Enol Lake at Cangues d'Onís (1070 MASL) date to around 4,000 cal BC (López-Merino et al., 2011; Moreno et al., 2011). We could think the anthropization process suggests Neolithic groups progressively climbed higher in the mountains throughout the period. However, the spatial distribution of the earlier evidence for anthropogenic environmental change does not meet that simplistic pattern. Thus, we find palynological sequences in El Valle lake (at Somiedu in Asturias) at 1570 MASL (Allen et al., 1996; McKeever, 1984) or from the peat bog in Lleitiriegos (at Villablino in, León) at 1700 MASL (Fombella-Blanco et al., 2003), showing no clear anthropization signals until the end of Late Prehistory. In contrast, nearby palaeoenvironmental datasets such as El Castro lake (Villablino, León) at 1317 MASL and La Mata paleo-lake (Cabrillanes, León) at 1500 MASL provide proof of anthropogenic pressure since the 3rd millennium BC (Jalut et al., 2010). In summary, we should perhaps think of the regional spread of Neolithic livelihoods in the Cantabrian Mountains as best represented by a patchwork pattern. This irregular spatial distribution in the uplands could be connected to the region's relatively small populations and to a later adoption of Neolithic traits. Also, we should not disregard the probability that local groups of hunter-gatherers resisted adopting herding and farming practices in ways that suggest more nuanced, rather than linear, evolutionary developments towards more complex and hierarchical societies in Late Prehistory (Parcero and Criado, 2013). Complementary exploitation of the lowlands and the uplands through seasonal hunting, gathering and herding activities at different altitudinal areas could explain the diverse anthropization of the study area.

Bronze Age: mining and the expansion of agrarian economy

Despite limited archaeological research in northwestern Iberia, it is broadly assumed that the livelihoods of the Bronze Age groups were not so different to the Neolithic communities regarding settlement patterns and subsistence strategies (Arias and Armendáriz, 1998; Méndez, 1994). However, the human impact through agriculture, pastoralism and mining increased the anthropogenic pressure on the environment in the Western Cantabrian Mountains. Archaeological evidence may inform us about a growing territorialization of the social and productive landscapes throughout this period, but some authors have emphasized the refractory nature of Western Cantabrian communities to external innovations during the Bronze Age (de Blas, 2000; Marín, 2011).

A cultural footprint on the landscape became clearer as the spread of agriculture and herding activities reduced forested areas in the uplands (López-Sáez et al., 2006). This process is particularly clear in some paleoenvironmental datasets such as Laguillín lake (at Riello in León) (García-Rovés in Carrión-García, 2012:380) or Enol Lake (Moreno et al., 2011:344), where forest suffered a great reduction throughout the 2nd millennium bc. The strength of the anthropization process in the Western Cantabrian area also resulted in landscape diversity, with coastal zones and the lower valleys developing more varieties of agrarian mosaics due to the cultivation of new crops and the extension of herding areas (Carrión-García et al., 2010:468; López-Merino et al., 2011). Moreover, the exploitation of copper ores and mining activities developed by the end of the 3rd millennium bc in the Cantabrian Mountains (de Blas, 2014). Along with the development of metallurgy, mining activities produced a noticeable atmospheric metal pollution that can be detected in some peat bogs (Comendador, 1999; de Blas, 2008a; Martínez-Cortizas et al., 2016). Isolated archaeological data gathered in alpine and subalpine zones, such as levels with charcoal documented in El Mayéu Busián (at Llena in Asturias) at 1500 MASL (Camino and Estrada, 2012), could be interpreted as seasonal occupational levels during the Bronze Age. Also, the few palynological data collected from archaeological sites allow us to establish links between the construction of megalithic monuments such as the Early Bronze Age burial chamber of La Mata'l Casare (at Quirós, Asturias) at 1,250 MASL (de Blas, 1994) and the increase of indicators for herding activities in its surroundings (Dupré-Ollivier in López-Merino, 2009:49). Some paleoenvironmental datasets such as the palynological sequences from El Valle or Lleitriegos show low anthropogenic pressure on the upland environment during the Bronze Age, even though there are megalithic burial mounds nearby. These situations emphasize the need to conduct more extensive archaeological research to understand exploitation of the uplands in the period.

As a consequence of population growth and the substantial increase in labor investment on the land by Bronze Age groups, the social and cultural landscapes changed. In contrast to Neolithic landscapes, the available archaeological evidence suggests that Bronze Age landscapes were increasingly territorialized through the continuation of megalithic burial traditions (Marín, 2011), the spread of schematic rock art linked to “natural monuments,” the appearance of metallic hoards in liminal places and with the appearance of identifiable “encounter points” (for trade or negotiating social/ cultural/ productive relations among groups) (de Blas, 2008a; Ruiz-Gálvez, 1998). These observations lead us to assume clearer and more permanent links between Bronze Age communities and their territories (although they were still itinerant) and the emergence of inequalities—particularly in the Late Bronze Age (Armada, 2013).

Iron Age and the sedentarization of local communities

At the beginning of the 1st millennium bc there was a substantial change in the settlement patterns of northwestern Iberia and the western Cantabrian area. After a few generations, local communities became fully sedentary, giving way to the Iron Age (González-Ruibal, 2006-2007; Marín, 2011; Parcero et al., 2017). Since then, social, political and productive landscapes were

organized around the hillforts—*castros* in Spanish, Asturian and Galician languages— which constituted the main identity referent for their inhabitants and the axis for anthropization processes.

Agricultural activities intensified in northwestern Iberia and the Cantabrian Mountains throughout the Iron Age thanks to the diversification of cultivated species, the use of new iron tools along with draught animals and the consolidation of stable crop field systems around the hillforts (Parcero et al., 2007; Teira-Brión, 2010). Traces of some of these agrarian structures underlay the actual fields and meadows, as commercial-led excavations found in nearby regions such as Galicia (Parcero, 2006). Regarding pastoralism, the Iron Age shows the development of a new livestock management system in the Cantabrian Mountains that relied on increasing cattle specialization throughout the first millennium BC. This observation could imply that seasonal alpine mobility or valley-transhumance models emerged as the main strategy for exploiting the fresh summer pastures in alpine and subalpine areas.

This pastoralist strategy would be similar to the traditional herding models deployed by rural communities until few decades ago (González-Álvarez et al., 2016). Therefore, the changes in the anthropization process shaped compartmentalized or divided landscapes that were organized around the monumentalized hillforts, which became the central nodes for the nuclearized settlement patterns in the Western Cantabrian Mountains during Iron Age.

The palaeoenvironmental records in the Western Cantabrian Mountains show a clear impact on the landscape after the full sedentarization of human groups during the Iron Age. Datasets such as those in El Castro and La Mata lakes reflect an extension of open areas and the spread of domestic cereals since 750/ 650 cal BC on the southern slopes of the Cantabrian Mountains (Jalut et al., 2010: 344). The diversity in the agrarian landscape of the northern slopes reach a new maximum regarding Late Prehistory with significant evidence for an extension in herding activities (López-Merino, 2009:160, 239). These processes can be observed in natural deposits such as La Molina, where the clearing of forests along the 1st millennium BC correlates with an increase in herding and mining activities (López-Merino et al., 2011, 2014) and the appearance of legumes and millet within the bioarchaeological remains recovered in Iron Age hillforts (González-Álvarez, 2016).

Social and productive landscapes organized around Iron Age hillforts endured until the Roman conquest of the western Cantabrian Mountains 2000 years ago when this area was integrated into the Roman Empire. After a rapid transformation process, most of the hillforts were abandoned (Marín and González-Álvarez, 2011; Sastre, 2001), while rural open-settlements emerged as the starting point of Roman rural landscapes with hamlets for peasant communities and *villae* inhabited by local elites (Fernández-Mier, 2011; Fernández-Ochoa and Gil, 2008).

The breath of the mountains throughout late prehistory

This investigation reinforces the need to integrate archaeological and palaeoenvironmental research in the study of prehistoric landscapes. The combination of both datasets helps us to build more complete narratives about the evolution of upland landscapes throughout Late Prehistory. Interdisciplinary research fills the gaps and lights up the shadows and limitations from both kinds of datasets. In addition, ethnographic and anthropological accounts help us to create denser narratives—closer to the human experience—about landscape biographies in upland regions such as the western Cantabrian Mountains.

Despite the scarce archaeological evidence in the study area, palaeoecological studies allow us to draw a preliminary picture of anthropization processes and create better research questions for future archaeological investigations. The palaeoenvironmental datasets available show human presence in alpine and subalpine areas of the study area throughout Late Prehistory. We need to assume that the western Cantabrian Mountains were inhabited, imagined and exploited

by human groups at least since the Mesolithic. Human agency was one of the key factors in the making of upland landscapes. Communities adopted different settlement patterns and followed diverse subsistence strategies that fostered varying anthropogenic changes in the environment and did not necessarily engender cultural, social or economic traits in any “lineal evolution.”

Were the uplands more “wild” or “marginal” landscapes than the lowlands during Late Prehistory? Preliminary research in the western Cantabrian Mountains points out that upland landscapes reflect vibrant social and cultural processes during Late Prehistory. Communities adopted particular strategies for adapting to mountainous environs, sometimes with complementary activities to those carried out in the lowlands. Traces of anthropogenic pressure on the environment could be read as a story of landscape anthropization that can be best explored through Landscape Archaeology and Historical Ecology. Aiming to fill the void and considering successful investigations carried out in other European upland areas, this line of research should be one of the more urgent tasks to be tackled by archaeologists in the region.

Furthermore, this research demonstrates that the “nature/ culture” divide is a Cartesian simplification of reality that needs to be nuanced through social sciences (Ingerson, 1994). Interestingly, there is a growing disaffection in the study area regarding the management of natural parks, the agrarian exploitation of land and the use of rural landscapes between environmental activists, public administrations, visitors, tourism entrepreneurs and local communities. This is a failure in public governance (Alonso-González et al., 2018), but also a consequence of social scientists remaining absent from public debates. Archaeology and Historical Ecology may help to reduce conflicts between different stakeholders by emphasizing past human roles in the management of upland landscapes across the long-term (González-Álvarez, 2019).

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