

XII.

THE CHRONOLOGY OF THE STRUCTURAL CHANGES BETWEEN THE COPPER AND BRONZE AGES IN IBERIA

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Abstract

The aim of this paper is to draw on the Iberian radiocarbon database in order to delve into the temporality of the main archaeological features that define the transition between the Copper and Bronze Ages, and to compare their chronological variation across Iberia. We seek an exploratory rather than explanatory goal: gaining knowledge from the exploratory power of radiocarbon dating analysis in order to define the archaeological settings that, subsequently, should be explained or understood by reference to social and/or environmental factors.

Keywords: prehistoric Iberia, radiocarbon dating, funerary record, settlement abandonment.

Resumen

El objetivo de este artículo es utilizar el registro radiocarbónico de la Península Ibérica para profundizar en la temporalidad de los principales elementos que definen la transición entre las edades del Cobre y del Bronce en esta extensa región. El análisis aplicado es de carácter exploratorio más que explicativo, y se orienta a la definición del marco cronológico de referencia para las manifestaciones arqueológicas, como requisito para subsiguientes propuestas explicativas o interpretativas en términos sociales y/o medioambientales.

Palabras clave: prehistoria, Península Ibérica, datación radiocarbónica, registro funerario, abandono de asentamientos.

12.1. INTRODUCTION AND OBJECTIVES

One of the main issues in the agenda for research on late prehistoric societies is the so-called ‘4.2 ky event’ (Meller et al. 2015; Blanco et al. 2018). This event refers to an abrupt discontinuity observed in the palaeoenvironmental and archaeological record of many Eurasian regions. In central and western Europe this is meant to signal the end of the Final Neolithic/Chalcolithic and, consequently, the emergence of new scenarios for the development of Early Bronze Age societies. Iberia shares with other neighbouring regions some diagnostic features of this material replacement:

- End of collective funerary rituals in megalithic monuments, hypogea and natural caves (largely dominant throughout Late Neolithic/Chalcolithic times), being mostly replaced by single burials in smaller structures such as pits and cists.

- Abandonment of Chalcolithic settlements, mostly open-air sites often located in lowlands, and proliferation of smaller, hilltop sites.

- Technological changes and innovations starting with the development of the Bronze Age and higher regional diversity in artefact assemblages. There is a general consensus regarding the decline of flint and bone tools—probably as a consequence of the spread and intensification of copper/bronze metallurgy—, and the proliferation of new types of pottery, which are generally plain and regionally distinctive, in contrast to the former Corded Ware/Bell Beaker decorated vessels.

Several factors have been pointed out to explain the apparently sudden replacement of Copper Age materiality, largely related to Neolithic

traditions, by new types of social contexts and artefactual assemblages. In general, these factors point to a catastrophic event, either climatic/ecological (volcanic eruption, drought, plague) or socio-political (large-scale migrations of steppe groups leading to remarkable demographic admixtures or even major population replacements in certain regions). All these hypotheses—and maybe even the way the problem has been set out—, assume an extremely short timespan between the old and new materialities. But, to what extent can we assert that this was the case? Were the material changes in burial contexts, settlements and artefacts synchronous amongst the regions considered? And, what was the situation within each region?

Inevitably, absolute dating is needed to answer these questions. Fortunately, late prehistoric Iberia has one of the best radiocarbon databases in Europe. As early as in the 1960s and the 1970s, significant radiocarbon series became available, first on a single site basis and later at a regional or ‘cultural’ scale (Almagro Gorbea and Fernández-Miranda 1978). In spite of gaps and failures in local and regional sequences, the growing radiocarbon series soon allowed archaeologists to challenge the traditional chronologies for late prehistory and to put forward more accurate and reliable periodizations (Renfrew 1967; Waldren 1986; González Marcén et al. 1992; Castro et al. 1996).

More than 20 years after these first efforts, absolute dating is a ‘routine’ procedure in any late prehistoric research project, and the Iberian radiocarbon database (largely accessible online) allows for increasing accuracy when establishing the chronology of particular artefacts, types of contexts and archaeological entities (‘archaeological groups’, ‘cultures’, ‘facies’, ‘periods’, and the like) (e.g. Gilman 2003; Micó 2005; Barceló 2008; García Sanjuán, Wheatley and Costa 2011; Nocete et al. 2011; Mataloto, Martins and Soares 2013; Jover, López and García-Donato 2014; Balsera et al. 2015; Oms et al. 2016; Lull et al. 2017; Soares and Arruda 2017; García-Puchol et al. 2018; Lozano and Aranda 2018).

Our aim in this paper is to draw on the Iberian radiocarbon database in order to delve into the temporality of the main archaeological features that define the transition between the Copper and Bronze Ages, and to compare their chronological variation across the whole peninsula. We will focus on specific structural traits rather than on artefacts, namely

a) the first examples of new single (and sometimes double) burials—perhaps the most widespread marker of the new Bronze Age times across western Europe—,

b) the decline of collective funerary contexts, and

c) the abandonment of Chalcolithic settlements.

It must be stressed that *our goal here is exploratory rather than explanatory*. It attempts to gain knowledge from the exploratory power of radiocarbon dating analysis in order to define the archaeological settings that, subsequently, should be explained or understood by reference to social and/or environmental factors.

12.2. MATERIALS AND METHOD

Whereas one of the key issues in radiocarbon dating is *sample* selection, in radiocarbon analysis it is *data* selection. In this case, the questions to be answered or the hypotheses to be tested have a strong influence on which radiocarbon dates must be included or excluded in comparative and/or statistical analysis. These decisions often involve implicit premises rooted in archaeological theory and method, because ‘inclusion’ and ‘exclusion’ are the outcome of applying certain criteria to the available data. It should be pointed out that these criteria may have a strong influence on the final results, so that making them clear is crucial for any further critical assessment and discussion.

In the following analysis, there are some general requirements for data selection and others to be applied depending on the type of context to be analysed. The general conditions and restrictions in the analysis are as follows.

- Radiocarbon dates obtained from either short or long-life samples could equally be included, although any relevant conclusions mainly based on long-life samples might be considered with caution.

- Radiocarbon dates with standard deviations larger than ± 100 years will be excluded.

- The lower limit of the radiocarbon series to be analyzed is set at 3600 BP. This arbitrary threshold broadly refers to the 20th century cal BCE, when Early Bronze Age was already fully established in Iberia.

- The whole of Iberia will be taken into account. The peninsula will be divided into broad geographical areas: Northwest (Galicia, Asturias, Cantabria), Northeast (mainly Catalonia), upper and middle Ebro river basin, middle and lower basins of both Douro and Tagus rivers, Southwest, the Levantine strip between the Ebro and Segura rivers and the Southeast corner (fig. 12.1)

Moreover, some remarks should be made regarding the contextual criteria ruling the selection of ^{14}C dates.

- **Single and double burials.** All the dates associated with these contexts, including intrusive pit and cist burials in former collective tombs, have been taken into account. As most burials

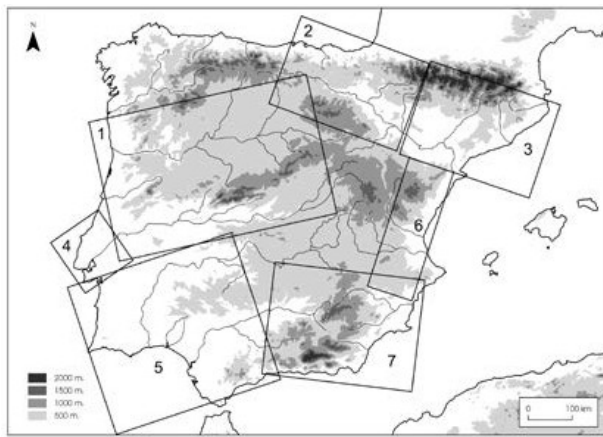


FIGURE 12.1. Iberian regions: 1. Lower and middle Douro, and middle Tagus; 2. Upper and middle Ebro; 3. Northeast; 4. Lower Tagus; 5. Southwest; 6. Levant and 7. Southeast.

are single inhumations, each tomb has usually only one radiocarbon date that is self-indicative of the burial chronology, in particular when it was obtained from human skeletal remains.

– Abandonment of Chalcolithic settlements.

The main difficulty in the case of individual sites is to relate a given radiocarbon date to the end of a specific occupation: (1) short-lived samples belonging to the end of Chalcolithic sequences would be desirable, but these contexts have not always been dated or the position of the radiocarbon results in the stratigraphic sequence is unclear; (2) in sites with horizontal development and unclear boundaries, it is difficult to guarantee that a given radiocarbon date indicates the time when a settlement was abandoned. To deal with contextual uncertainty and lack of information, only sites with (a) series formed by at least three valid radiocarbon dates—aiming to ensure a certain degree of research coverage; and (b) an occupation starting at least in the second quarter of the 3rd millennium onwards will be considered. Within each individual radiocarbon series, only *the most recent date* has been selected for analysis, as it *probably* shows the last Chalcolithic activity. Moreover, relevant contextual data from vertically stratified sites (if available) have also been taken into account in order to assess the proximity of the radiocarbon dates with the actual end of a given Chalcolithic occupation.

– **Termination of collective funerary structures.** Here the difficulties are similar to those affecting settlements. Only in a handful of cases it seems likely that a single radiocarbon date, sometimes from a layer containing dozens or hundreds of skeletal remains, could reflect the chronology of its last funerary use. Thus, the criteria applied here are the same as in the case of settlements: (a) series including at least three valid radiocarbon dates associated with collective burials, and

(b) tombs starting at least in the second quarter of the 3rd millennium. As in the former case, only the most recent date has been considered.

It is worth noting that radiocarbon dates from the types of contexts listed above have also *different heuristic value*. Those from single graves give direct chronological milestones clearly related to particular burials. By contrast, those dates associated with settlement abandonment and collective burial cancellation tend to suggest a *terminus post quem* for the real ending of a given setting of social activity. Thus, comparisons between chronological series should take these time differences into account.

A second issue is related to inference procedures. Given that many Iberian Chalcolithic communities were highly mobile, radiocarbon dates associated with village and cemetery abandonment do not necessarily entail substantial or large-scale social transformations. Hence, *only significant concentrations of dates* in the radiocarbon series of Chalcolithic settlements and collective burials allow us to identify moments or periods of generalised change. Coupled with this circumstance, an eventual marked decrease in the frequency of dates may be also indicative of social discontinuity.

The sample to be analysed amounts to 242 radiocarbon dates for the 3 kinds of contexts considered (single/double graves, cancellation of collective tombs and abandonment of settlements) (table 12.1). Further classification takes into account geographical provenance. All series have been analysed and graphed by means of probability sum calculations performed with OxCal 4.3.2 (Bronk Ramsey 2017; see also OxCal program at <https://c14.arch.ox.ac.uk/oxcal.html>).

12.3. DISCUSSION AT A REGIONAL SCALE

12.3.1. THE NEW SINGLE AND DOUBLE GRAVES

The radiocarbon series from northeastern Iberia includes only 6 dates widely distributed in a remarkably large interval between 2800/2700 and 2200 cal BCE (fig. 12.2). Some of these are the earliest dates included in this study: those from the Savassona burial pit¹ and the megalithic cist of Reguers de Seró, around 2750 cal BCE.

¹ The calibrated date for Savassona (4175±95 BP) is in fact a combined date issued from two individual dates obtained from the same human skeleton. Both were measured five decades ago and had large standard deviations (CSIC-31: 4070±130 BP and I-1518: 4310±140 BP). Therefore, the reliability and meaning of this date should be handled with caution.

Site	Lab code	BP	Cal 1s	Cal 2s	Median
Single/double graves NE Iberia					
Savassona	CSIC-31/I-1518	4175, 95	-2888 -2632	-3006 -2478	-2746
Reguers de Seró	Beta-230406	4150, 40	-2870 -2666	-2880 -2620	-2743
Bosc d'en Quer	-	3985, 50	-2575 -2464	-2831 -2310	-2514
Hipogeu C/París	UBAR-860	3870, 45	-2456 -2292	-2469 -2206	-2352
Corona de Hualde	GrA-13665	3800, 40	-2293 -2146	-2452 -2059	-2240
Bòvila Casals	LTL-13808A	3764, 45	-2281 -2061	-2336 -2032	-2181
Single/double graves lower and middle Douro & middle Tagus					
La Velilla	Poz-43074	4170, 35	-2877 -2695	-2885 -2632	-2763
Vale da Cerva	GrA-8402	4140, 50	-2867 -2632	-2878 -2581	-2731
El Hornazo	UGA-6995	4100, 25	-2836 -2581	-2859 -2574	-2658
Fuente Celada	UGA-7562	4100, 25	-2836 -2581	-2859 -2574	-2658
Valle de las Higueras 9	Beta-269138	4090, 40	2850 -2573	-2866 -2493	-2654
Soto de Tovilla	Poz-25974	4065, 35	-2834 -2497	-2853 -2487	-2603
Cerro de la Cabeza	Beta-109828	4010, 50	-2579 -2471	-2840 -2348	-2537
El Hornazo	UGA-6838	4010, 25	-2569 -2488	-2576 -2473	-2529
Humanejos	CNA-4023	3941, 33	-2546 -2349	-2566 -2308	-2441
El Hundido	CSIC-1996	3933, 32	-2477 -2348	-2562 -2306	-2420
Humanejos	CNA-4025/ GrM-15288	3922, 20	-2470 -2349	-2475 -2343	-2413
Humanejos	GrM-15296	3920, 25	-2470 -2349	-2476 -2307	-2410
Humanejos	Ua-43524	3917, 33	-2470 -2348	-2482 -2295	-2404
Humanejos	GrM-15290	3910, 25	-2467 -2348	-2472 -2306	-2403
Humanejos	GrM-15291	3910, 25	-2467 -2348	-2472 -2306	-2403
Humanejos	Ua-43531	3907, 33	-2467 -2347	-2474 -2294	-2395
Humanejos	GrM-15289	3905, 20	-2464 -2349	-2470 -2308	-2403
Vale Ferreiro 2	AA-89670	3894, 44	-2463 -2310	-2479 -2208	-2379
Gótzquez	CNA-2350	3890, 35	-2460 -2340	-2471 -2235	-2380
Gótzquez	CNA-2352	3890, 35	-2460 -2340	-2471 -2235	-2380
Humanejos	Ua-43526/ GrM-15426	3889, 17	-2456 -2346	-2463 -2301	-2392
Camino de las Yeseras	PSUAMS-2320	3875, 20	-2452 -2299	-2461 -2292	-2375
Pajares de Adaja	GrA-6287	3870, 50	-2457 -2291	-2472 -2202	-2349
Las Mayores	Beta-471833	3870, 30	-2454 -2293	-2465 -2211	-2360
Cerro de la Cabeza	Beta-109831	3850, 60	-2454 -2209	-2472 -2141	-2320
Villaverde de Íscar	GrA-6288	3840, 50	-2431 -2205	-2465 -2146	-2306
Arroyal	MAMS-14857	3837, 25	-2340 -2209	-2456 -2202	-2289
Camino de las Yeseras	Ua-40216	3833, 35	-2341 -2206	-2458 -2153	-2288
Cerro de la Cabeza	Beta-109829	3820, 60	-2401 -2146	-2466 -2060	-2275
Humanejos	Ua-43525/ GrM-16341	3805, 27	-2286 -2203	-2340 -2142	-2243
Humanejos	Ua-40222	3800, 34	-2290 -2151	-2401 -2135	-2238
Valle Higueras 5	Beta-157729	3790, 40	-2287 -2146	-2401 -2046	-2225
Pista de Motos	CIRCE-?	3768, 31	-2275 -2139	-2289 -2050	-2184
Pista de Motos	CIRCE-?	3764, 25	-2266 -2139	-2286 -2051	-2176
El Hundido	Beta-492280	3760, 30	-2273 -2136	-2287 -2044	-2173
Los Chorrillos	CNA-2358	3755, 35	-2271 -2061	-2287 -2039	-2168
Camino de las Yeseras	Ua-35017	3740, 40	-2203 -2045	-2285 -2029	-2146

Site	Lab code	BP	Cal 1s	Cal 2s	Median
El Virgatal	Poz-49174	3730, 40	-2199 -2042	-2281 -1985	-2130
Camino de las Yeseras	Ua-35023	3725, 40	-2198 -2040	-2279 -1982	-2121
Terrazas del Manzanares	Poz-49975	3720, 35	-2196 -2039	-2271 -1984	-2110
Reina I	Beta-290897	3680, 30	-2134 -2025	-2190 -1965	-2075
Fuente Olmedo	CSIC-483 OxA-2907	3660, 40	-2131 -1965	-2190 -1926	-2036
Humanejos	Ua-41491	3679, 35	-2135 -2023	-2194 -1954	-2071
Vale Ferreiro 1	Ua-19728	3635, 50	-2121 -1931	-2141 -1885	-2004
Camino de las Yeseras	Ua-35012	3630, 30	-2030 -1948	-2127 -1905	-1992
Terraço das Larenjeiras	GrA-54501	3615, 35	-2026 -1933	-2122 -1888	-1976
Single/double graves SW Iberia					
Valencina de la Concepción	CNA-1277	4082, 44	-2848 -2500	-2865 -2488	-2642
Montelirio PP4	CNA-1499	3967, 30	-2565 -2463	-2574 -2349	-2491
Valencina de la Concepción	CNA-1264	3905, 35	-2466 -2346	-2479 -2287	-2392
Monte da Velha 1	Beta-194027	3900, 40	-2466 -2341	-2481 -2212	-2385
La Orden-Seminario	CNA-327	3795, 50	-2297 -2140	-2456 -2045	-2235
Nossa Senhora da Conceição	Wk-17089	3758, 36	-2274 -2061	-2288 -2040	-2172
Carmona	CNA-2376.1.1	3755, 30	-2266 -2064	-2284 -2041	-2168
Bela Vista 5	Beta-330091	3740, 30	-2201 -2054	-2275 -2035	-2147
Alcalar 5	Beta-316624	3730, 30	-2198 -2046	-2266 -2032	-2131
C.M. Las Cruces SE-B	Beta-225413	3720, 40	-2196 -2039	-2275 -1980	-2112
La Orden-Seminario	CNA-330	3700, 50	-2195 -2024	-2275 -1945	-2090
Alcalar	Beta-254017	3690, 40	-2139 -2025	-2199 -1960	-2081
Monte das Cabeceiras 4	Sac-3061	3670, 40	-2134 -1979	-2195 -1939	-2054
Monte das Aldeias	Beta-338483	3670, 30	-2132 -1981	-2139 -1957	-2056
Mercador	OxA-11982	3664, 29	-2131 -1978	-2136 -1955	-2042
C.M. Las Cruces SE-B	Beta-225412	3660, 40	-2131 -1965	-2190 -1926	-2036
C.M. Las Cruces SE-B	Beta-225411	3640, 50	-2125 -1939	-2189 -1888	-2010
Los Poyos del Molinillo	Ua-21796	3615, 40	-2028 -1926	-2131 -1884	-1977
La Orden-Seminario	CNA-622	3600, 60	-2111 -1883	-2136 -1773	-1961
Single/double graves Levant					
Barranc de Beniteixir	Beta-244533	4060, 40	-2834 -2493	-2853 -2476	-2598
La Vital	Beta-222444 OxA-V-2360-15	3959, 24	-2559 -2462	-2570 -2349	-2480
El Salvador	Beta-414718	3970, 30	-2564 -2465	-2575 -2350	-2495
La Vital	Beta-229791	3920, 50	-2475 -2310	-2568 -2214	-2403
La Vital	Beta-222443	3830, 40	-2389 -2202	-2459 -2148	-2285
Muntanya Assolada	-	3760, 40	-2277 -2060	-2293 -2036	-2174
Lloma de Betxí	Beta-195317	3650, 40	-2123 -1954	-2140 -1916	-2021
Single/double graves SE Iberia (non Argaric)					
Glorieta de San Vicente	KIA-19491	4075, 30	-2834 -2503	-2856 -2493	-2616
Marroquies Bajos	AA-107181	4011, 33	-2571 -2484	-2619 -2467	-2531
Cerro de la Virgen 30.A1	Ua-39419	3802, 30	-2288 -2201	-2340 -2140	-2240
Cerro de la Virgen 30.C1	Ua-39421	3785, 33	-2282 -2145	-2338 -2058	-2215
Motilla de Azuer	Beta-229993	3780, 40	-2283 -2141	-2342 -2042	-2206
Cerro de la Virgen 30.B1	Ua-39420	3780, 32	-2281 -2142	-2299 -2050	-2205
Molinos de Papel 1	MAMS-11826	3780, 30	-2280 -2143	-2296 -2060	-2205
Castillejo del Bonete 4	R-1687	3720, 70	-2271 -1984	-2340 -1921	-2121

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Site	Lab code	BP	Cal 1s	Cal 2s	Median
Molinos de Papel 2	MAMS-11827	3711, 29	-2188 -2038	-2200 -2027	-2093
Molinos de Papel 2	MAMS-11828	3701, 26	-2136 -2038	-2196 -2023	-2087
Molinos de Papel 1	MAMS-11825	3699, 30	-2136 -2036	2198 -1981	-2088
El Acequión	MAMS-17128	3695, 24	-2134 -2036	-2194 -1984	-2086
El Acequión	MAMS-17129	3677, 25	-2132 -2025	-2141 -1973	-2076
Motilla de Azuer	Beta-325505	3670, 30	-2132 -1981	-2139 -1957	-2056
Motilla de Azuer	Ua-39246	3651, 30	-2119 -1961	-2135 -1940	-2020
Motilla de Azuer	Beta-375289	3640, 30	-2036 -1951	-2133 -1921	-2003
Motilla de Azuer	Beta-229995	3620, 50	-2111 -1907	-2140 -1829	-1985
El Acequión	MAMS-17127	3616, 24	-2021 -1942	-2034 -1903	-1975
Molinos de Papel	KIA-39854	3610, 30	-2021 -1930	-2110 -1889	-1969
El Argar graves					
Gatas 42	OxA-10994	3765, 38	-2279 -2135	-2295 -2038	-2181
Fuente Álamo 69	KIA-22261	3760, 25	-2266 -2137	-2282 -2049	-2173
Cerro de la Virgen 16	Ua-39407	3709, 41	-2191 -2036	-2271 -1976	-2097
Gatas 1	OxA-4961	3690, 65	-2196 -1977	-2283 -1902	-2081
Los Tintes 2	OxA-7668	3690, 40	-2139 -2025	-2199 -1960	-2081
Fuente Álamo 58	KIA-52137	3690, 35	-2136 -2031	-2198 -1966	-2082
La Bastida 12	KIA-52122	3690, 22	-2132 -2035	-2142 -1983	-2086
Gatas 37	OxA-4473	3665, 65	-2136 -1956	-2275 -1883	-2048
Castellón Alto 85	Ua-37886	3665, 45	-2133 -1974	-2196 -1921	-2045
Punta de los Gavilanes	KIA-33601	3660, 30	-2128 -1977	-2136 -1950	-2035
El Argar 89	OxA-4965	3655, 65	-2135 -1945	-2272 -1834	-2033
La Bastida 12	KIA-52123	3635, 21	-2028 -1966	-2121 -1937	-1995
La Bastida 88	MAMS-19929	3642, 20	-2033 -1966	-2122 -1943	-2001
Castellón Alto	Ua-37892	3640, 40	-2117 -1945	-2136 -1907	-2007
El Oficio 62	OxA-4970	3635, 60	-2128 -1921	-2199 -1785	-2006
Fuente Álamo 75	OxA-4973	3635, 50	-2121 -1931	-2141 -1885	-2004
La Almoloya 87	MAMS-32645	3631, 24	-2026 -1958	-2120 -1920	-1992
Gatas 33	OxA-3970	3630, 60	-2125 -1915	-2197 -1782	-2000
Castellón Alto 75	Ua-37882	3630, 50	-2119 -1922	-2141 -1882	-1998
Caramoro I	Beta-464794	3620, 30	-2025 -1943	-2118 -1894	-1980
La Bastida 89	MAMS-19930	3615, 22	-2020 -1942	-2032 -1911	-1974
Ifre 1	OxA-5049	3610, 80	-2131 -1881	2198 -1751	-1975
Fuente Álamo 52	OxA-4971	3610, 50	-2030 -1901	-2136 -1782	-1973
El Argar 534	MAMS-15344	3609, 21	-2018 -1937	-2028 -1908	-1967
Gatas 41	MAMS-15345	3606, 22	-2016 -1926	-2026 -1902	-1963
Fuente Álamo 58	KIA-52136	3600, 30	-2016 -1913	-2031 -1888	-1957
Cancellation collective tombs NE Iberia					
Cova de la Guineu	OxA-16881	4110, 38	-2854 -2582	-2871 -2505	-2688
Cova Foradada	OxA-23539	4016, 29	-2572 -2489	-2618 -2471	-2530
Hipogeu de La Sagrera	LTL-12677A	3998, 60	-2620 -2461	-2850 -2302	-2528
Hipogeu del C. París	MAMS-25939	3915, 29	-2469 -2348	-2475 -2299	-2404
Forat de Conqueta	Ua-34294	3900, 40	-2466 -2341	-2481 -2212	-2385
Hipogeu del C. París	UBAR-860	3870, 45	-2456 -2292	-2469 -2206	-2352
Can Fatjó dels Aurons	UBAR-1015	3840, 60	-2451 -2204	-2470 -2139	-2305
Costa de Can Martorell	Ly-7838	3795, 55	-2335 -2139	-2457 -2043	-2236

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Site	Lab code	BP	Cal 1s	Cal 2s	Median
Cau del Tossal Gros	Beta-301153	3790, 30	-2285 -2147	-2336 -2135	-2224
Cancellation collective tombs upper & middle Ebro					
Tres Montes	-	4080, 100	-2861 -2491	-2897 -2349	-2652
La Atalayuela	BM-2365	4060, 60	-2836 -2489	-2866 -2469	-2615
Cueva de San Juan	D-AMS-019113	4053, 35	-2830 -2492	-2847 -2474	-2581
Aizibita	GrA-4889 GrA-5097	4002, 33	-2567 -2478	-2617 -2465	-2529
El Sotillo	Beta-299300	4000, 40	-2569 -2474	-2831 -2356	-2528
Morea I	GrA-16927	3970, 45	-2573 -2410	-2617 -2309	-2490
Charracadiá	GrA-18891	3960, 60	-2571 -2348	-2828 -2235	-2469
Larrarte	Ua-10376	3920, 75	-2551 -229	-2619 -2149	-2400
Mandubi Zelaia	GrA-22850	3905, 45	-2468 -2340	-2551 -2210	-2388
Cueva de los Cristales	GrA-26967	3900, 100	-2557 -2207	-2834 -2041	-2376
Cueva de Abauntz	GrA-377323	3900, 35	-2463 -2346	-2476 -2286	-2388
Alto de La Huesera	Beta-301418	3850, 30	-2433 -2211	-2458 -2207	-2321
Collado del Mallo	Beta-89990	3840, 70	-2454 -2203	-2477 -2049	-2304
Layaza	Beta-317864	3770, 30	-2275 -2140	-2290 -2051	-2187
Cancellation collective tombs lower & medium Douro & middle Tagus					
Chã de Parada	Gif-7672	3940, 80	-2567 -2301	-2835 -2151	-2429
Arroyal	UGA-15904	3850, 30	-2433 -2211	-2458 -2207	-2321
Humanejos	Ua-40217	3781, 36	-2283 -2142	-2338 -2046	-2207
Camino de las Yeseras	Ua-39312	3819, 30	-2299 -2202	-2436 -2143	-2258
El Castillejo	Beta-145274	3810, 70	-2400 -2140	-2467 -2041	-2260
El Rebollosillo	CNA-4014	3774, 30	-2276 -2141	-2293 -2057	-2195
Cancellation collective tombs lower Tagus					
Casa da Moura	Wk-28008	4154, 30	-2870 -2674	-2877 -2631	-2749
Rego da Murta	Beta-190008	4060, 50	-2835 -2491	-2861 -2472	-2607
Paimogo	UGAMS-22150	4030, 25	-2577 -2491	-2620 -2475	-2531
Bolores	Beta-256325	4000, 40	-2569 -2474	-2831 -2356	-2528
Verdelha dos Ruivos	ICEN-1242	3940, 45	-2557 -2346	-2570 -2296	-2433
Poço Velho	Beta-244397	3920, 40	-2472 -2346	-2561 -2290	-2405
São Pedro do Estoril 2	Beta-178466	3850, 40	-2437 -2210	-2461 -2204	-2323
São Pedro do Estoril 1	Beta-178468	3790, 40	-2287 -2146	-2401 -2046	-2225
Cova da Moura	OxA-33491- 33490 PSUAMS-1750	3782, 16	-2276 -2147	-2285 -2141	-2204
Galeria da Cisterna	OxA-28856	3774, 28	-2276 -2141	-2290 -2061	-2194
Cancellation collective tombs SW Iberia					
Olival da Pega 2	ICEN-957	4130, 60	-2866 -2620	-2884 -2501	-2719
Herdade de Santa Margarita 3	Beta-166423	4100, 40	-2851 -2578	-2871 -2497	-2671
Montelirio	Ua-40802	4002, 31	-2567 -2479	-2581 -2466	-2529
Monte de Cortes 2	Sac-2574	3920, 50	-2475 -2310	-2568 -2214	-2403
Montelirio PP4-10.042-10.04	Erl-17299	3905, 75	-2481 -2236	-2577 -2146	-2381
Perdigões	Beta-313720	3850, 30	-2433 -2211	-2458 -2207	-2321
Valencina de la Concepción	Sac-2216	3840, 60	-2451 -2204	-2470 -2139	-2305
Torre Centirà 2	Sac-2796 Beta-331980	3690, 25	-2133 -2034	-2192 -1981	-2085
Cancellation collective tombs Levant & SE Iberia (non Argaric)					
Cova dels Diablets	AMS-18651	4141, 21	-2861 -2640	-2872 -2627	-2735

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Site	Lab code	BP	Cal 1s	Cal 2s	Median
Llano del Jautón 1	ETH-74316	4112, 20	-2850 -2620	-2859 -2580	-2675
Marroquies Bajos	AA-107211	4004, 32	-2568 -2479	-2617 -2466	-2529
Los Millares 74	ETH-89499	3963, 27	-2561 -2464	-2571 -2349	-2486
Marroquies Bajos	AA-107199	3952, 32	-2564 -2351	-2569 -2344	-2469
Marroquies Bajos	AA-107182	3902, 32	-2464 -2346	-2471 -2294	-2391
Panoría 10	ETH-71515	3886, 23	-2456 -2343	-2463 -2298	-2385
Los Millares 71	SUERC-86913	3883, 34	-2457 -2310	-2470 -2215	-2375
Cova de la Pastora	UCIAMS-66311	3875, 20	-2452 -2299	-2461 -2292	-2375
Los Millares 75	SUERC-86902	3872, 32	-2454 -2295	-2466 -2211	-2362
El Barranquete 8	Beta-436480	3850, 30	-2433 -2211	-2458 -2207	-2321
La Atalaya 6	ETH-74308	3844, 20	-2344 -2211	-2455 -2205	-2302
Camino del Molino	Beta-261524	3830, 40	-2389 -2202	-2459 -2148	-2285
Cova del Barranc del Migdia	Beta-300991	3800, 40	-2293 -2146	-2452 -2059	-2240
Venta del Rapa	Ua-40750	3782, 33	-2281 -2143	-2334 -2051	-2209
Marroquies Bajos	Ua-21455	3775, 45	-2286 -2138	-2344 -2036	-2199
El Barranquete 11	CNA-2406	3730, 35	-2198 -2044	-2276 -2028	-2130
Venta del Rapa	Ua-40753	3650, 30	-2118 -1962	-2135 -1939	-2018
Marroquies Bajos	Ua-40050	3617, 30	-2023 -1941	-2115 -1893	-1977
Abandonment of settlements: middle & lower Douro & middle Tagus					
Huerta de los Cabrerros	CSIC-1129	4104, 33	-2848 -2580	-2866 -2503	-2673
Aldeagordillo	Beta-83085	4100, 80	-2863 -2503	-2880 -2483	-2679
Barrocal Alto	CSIC-728	4100, 60	-2859 -2574	-2876 -2491	-2679
Las Pozas	GrN-12127	4075, 30	-2834 -2503	-2856 -2493	-2616
La Atalaya	Poz-38004	4060, 40	-2834 -2493	-2853 -2476	-2598
Bitarados 3	AA-63065	4046, 42	-2625 -2489	-2850 -2471	-2575
Los Picos	Beta-169222	4040, 40	-2620 -2488	-2840 -2469	-2563
Aguas Vivas	DSH-529	4038, 29	-2617 -2491	-2831 -2474	-2545
Gózquez	Beta-134862	4020, 50	-2617 -2473	-2855 -2409	-2546
Buraco da Pala	GrN-19101	3955, 25	-2562 -2459	-2569 -2348	-2475
Casetón de la Era	Poz-57753	3945, 30	-2550 -2349	-2567 -2341	-2458
Camino de las Yeseras	Beta-236610	3910, 40	-2468 -2346	-2550 -2234	-2394
El Pulpito	UGA-6836	3880, 25	-2455 -2308	-2464 -2290	-2378
Los Ituerros	I-16149	3850, 100	-2466 -2153	-2576 -2027	-2312
Mejorada 1	Beta-272827	3790, 40	-2287 -2146	-2401 -2046	-2225
Abandonment of settlements: lower Tagus					
Olelas	ICEN-347	4050, 70	-2836 -2475	-2876 -2458	-2606
Chibanes	Beta-296422	3900, 40	-2466 -2341	-2481 -2212	-2385
Barranco do Farinheiro	Beta-425876	3900, 30	-2463 -2346	-2470 -2297	-2391
Leceia	Beta-260295	3840, 40	-2401 -2206	-2461 -2154	-2304
Rotura	OxA-5540	3810, 50	-2339 -2146	-2460 -2064	-2257
Zambujal	KIA-7259	3801, 43	-2296 -2144	-2456 -2058	-2242
Penha Verde	Beta-296580	3680, 40	-2136 -1984	-2196 -1950	-2070
Abandonment of settlements: SW Iberia					
Monte da Tumba	ICEN-117	4180, 30	-2879 -2698	-2887 -2666	-2773
São Pedro	KIA-33865	4043, 35	-2620 -2491	-2836 -2472	-2564
Escoural	ICEN-610	3940, 90	-2569 -2296	-2849 -2143	-2430
Junta de los Ríos	Ua-23884	3880, 40	-2456 -2301	-2470 -2210	-2368

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Site	Lab code	BP	Cal 1s	Cal 2s	Median
La Pijotilla	BM-1603	3860, 70	-2459 -2212	-2561 -2136	-2330
Porto das Carretas	Beta-193743	3840, 60	-2451 -2204	-2470 -2139	-2305
Cabezo Juré	I-18306	3830, 100	-2458 -2147	-2569 -1981	-2286
San Blas	Beta-178652	3820, 40	-2339 -2200	-2457 -2142	-2268
Loma del Real Tesoro	CNA-3785	3820, 31	-2332 -2202	-2452 -2144	-2260
Perdigões	Beta-315716	3770, 30	-2275 -2140	-2290 -2051	-2187
Bela Vista 5	Beta-324674	3770, 30	-2275 -2140	-2290 -2051	-2187
Porto Torrão	Sac-2028	3700, 60	-2197 -1983	-2284 -1928	-2091
Abandonment of settlements: SE Iberia					
El Prado	Beta-293368	4090, 40	-2850 -2573	-2866 -2493	-2654
Terrera Ventura	I-7422	4010, 95	-2839 -2349	-2872 -2291	-2549
Campos	GrN-15507	3915, 40	-2470 -2346	-2561 -2287	-2399
Los Millares	Beta-124530	3900, 60	-2468 -2299	-2566 -2203	-2378
Vilches IV	Beta-450082	3880, 30	-2455 -2308	-2467 -2236	-2375
El Malagón	BM-2348	3870, 60	-2462 -2287	-2487 -2145	-2346
La Vital	Beta-222447	3870, 50	-2457 -2291	-2472 -2202	-2349
Almizaraque	CSIC-269	3860, 60	-2457 -2233	-2476 -2142	-2333
Albalate	I-?	3830, 100	-2458 -2147	-2569 -1981	-2286
Lorca	UtC-5526	3830, 40	-2389 -2202	-2459 -2148	-2285
El Tarajal	CSIC-224	3820, 50	-2391 -2150	-2459 -2140	-2273
Fortín 1	BM-2345	3820, 40	-2339 -2200	-2457 -2142	-2268
Las Pilas	IRPA-1027	3810, 50	-2339 -2146	-2460 -2064	-2257
Marroquies Bajos	CNA-3131 Beta-405654	3803, 24	-2286 -2202	-2334 -2142	-2241
Cerro de la Virgen (II)	GrN-5764	3800, 35	-2290 -2151	-2429 -2065	-2239
Camí de Missena	Beta-331020	3800, 30	-2287 -2201	-2339 -2139	-2238
El Silillo	Ua-35080	3775, 40	-2281 -2139	-2338 -2039	-2198
Venta del Rapa	Ua-40756	3765, 30	-2275 -2137	-2287 -2050	-2179
Peñas de los Gitanos	Ua-36205	3720, 35	-2196 -2039	-2271 -1984	-2110

TABLE 12.1. *List of the radiocarbon dates included in the analysis, classified by the type of context dated and its large-scale geographical setting. For additional contextual data and bibliographical references, see <http://www.idearqueologia.org/>.*

Also in this early horizon² there are two dates from La Velilla and Vale da Cerva in the middle and lower Douro basin, respectively. In fact, the radiocarbon series from central inner Iberia, taking together the Douro and Tagus basins, is the most abundant. It has 46 dates distributed with a highly consistent trend. Whereas in north-eastern Iberia there is a large gap after the dates from Savassona and Reguers, in the Douro valley ca. 2650 cal BCE a large and densely packed series began (fig. 12.2). The contributors are sites with single pit graves (El Hornazo, Soto de Tovilla and Fuente Celada) in the context of small,

open air semisedentary settlements. However, it was from ca. 2450-2400 cal BCE onwards when a new relevant increase in dates is attested (El Hundido, Pajares de Adaja, Villaverde de Íscar, etc.), giving rise to a long period characterised by a high density of dates (nearly 40, over approximately five centuries, between ca. 2450 and the lower limit of this study by 1900 cal BCE). Furthermore, sites in the middle Tagus valley are now well-represented (Humanejos, Gózquez, Camino de las Yeseras, Las Mayores), this region having had, up until then, only one early and isolated date from Valle de las Higueras 9.

The consistency of the Douro and Tagus valleys series is unparalleled in other Iberian regions, where the earliest dates point to ca. 2600 cal BCE and show scattered patterns in their

² Other dates from northern Iberian sites as those from the single burial in the natural cave of Karea-B (OxA-3371: 4125±35 BP) might belong to this early horizon.

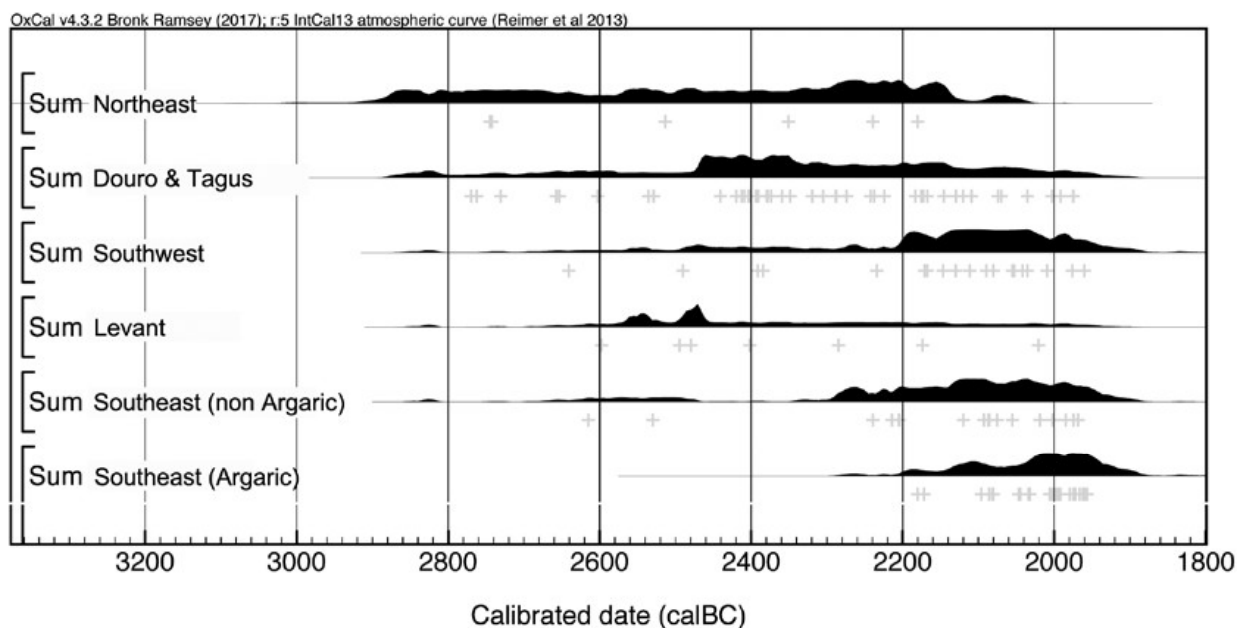


FIGURE 12.2. *Sum of probabilities of the radiocarbon series related to single and double burials in Iberia (+ under graphs show median values of particular dates).*

initial distributions (i.e. a pit burial in F1 structure from Valencina de la Concepción—Cerro de la Cabeza sector—southwestern Iberia, and also the single burial of Glorieta de San Vicente in the Southeastern corner). It is worth mentioning, however, the concentration of dates between ca. 2600 and 2480 cal BCE in the Levantine strip of Castellón and Valencia (Barranc de Beniteixir, El Salvador, La Vital), which resembles, in some ways, the early picture of the trend observed in inner Iberia. However, after these early dates the Levantine series does not show any significant clustering of dates.

From ca. 2400 and especially 2300 cal BCE onwards, single burials are documented all over Iberia. However, it must be pointed out that the main trend in the series of the non-Argaric Southeast starts rather late, ca. 2300–2200 cal BCE, with dates from Azuer, Cerro de la Virgen (tomb 30) and Molinos de Papel (tomb 1).³ This relatively late beginning is also documented in the Southwest, where the earliest examples of the main concentration of dates are placed even more recently, ca. 2200 cal BCE. In fact, considering the median values, 14 out of the 19 dates forming the whole series fall after 2200 cal BCE. In short, the southernmost Iberian regions were the last

to attest *consistently* the practice of individualized burial. Interestingly, these southern regions will harbour the highest number of this kind of burials during the following Early Bronze Age, especially in the southeastern corner where El Argar society developed after 2200 cal BCE.

12.3.2. END OF COLLECTIVE BURIALS

In northeastern Iberia, the distribution of radiocarbon dates related to the end of collective tombs is similar to that the earliest single burials. The series has 9 dates spanning ca. 2700 to 2200 cal BCE, with a slightly higher frequency in the 2400–2200 cal BCE period (fig. 12.3). The pattern in the nearby upper and middle Ebro basin seems different, with a remarkable frequency of possible terminations between ca. 2650 and 2300 cal BCE. The whole series in this region amounts to 14 dates, and almost all of them (n=13) fall into this chronological range (megalthic tombs of Tres Montes, Aizpea, El Sotillo, Morea 1, Charracadía, Larrarte, Mandubi Zelaia, Alto de la Huesera and Collado del Mallo, and the caves of San Juan, Cristales and Abauntz). Unfortunately, there is no regional series of single/double burials to compare with.⁴ However, the western end of the Ebro

³ Radiocarbon dates for the Gatas tombs 11 and 13 have not been included in the analysis, because the data from the 19th century excavation do not allow to determine whether they were single graves or they belonged to a collective burial in a rockshelter together with the remains labelled as tombs 12, 14, 15 and 16.

⁴ The only exception is the rather late date GrA-13665 from Corona de Hualde (Navarra), ca. 2240 cal BCE, that has been included in the northeastern series.

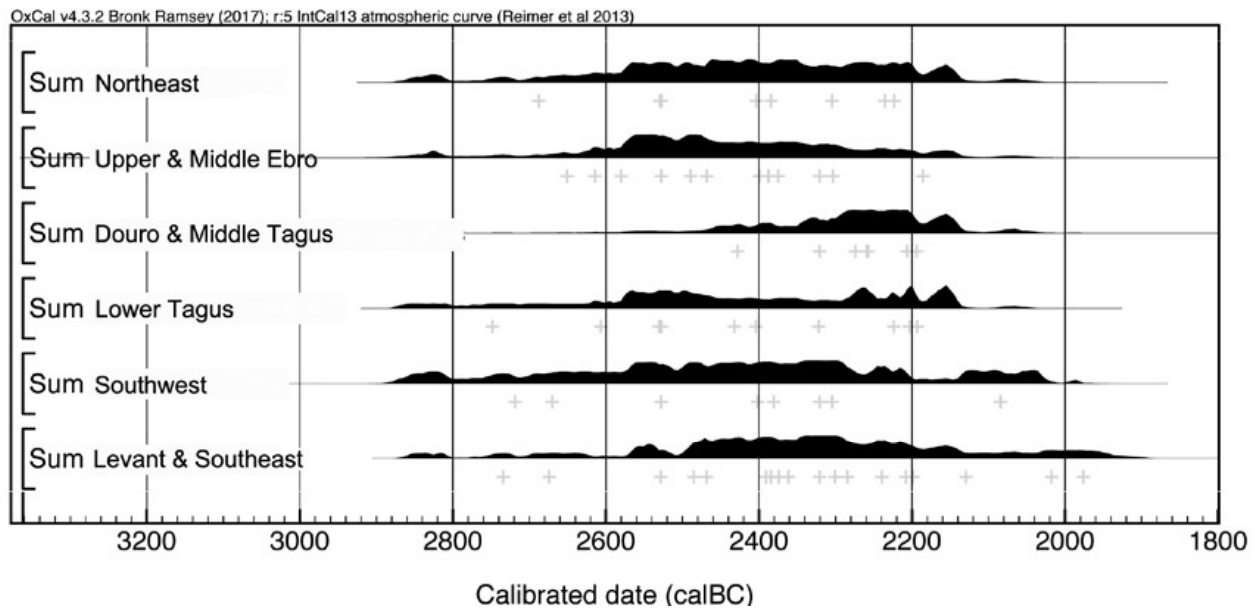


FIGURE 12.3. *Sum of probabilities of the radiocarbon series related to the cancellation of communal burials in Iberia (+ under graphs show median values of particular dates).*

basin connects with the Douro valley, where the earliest, largest and most reliable series of dates from single burials in Iberia well before 2200 cal BCE is documented (cf. supra). The comparison between the last collective inhumations in the Ebro basin and the new single burials in the Douro valley shows that both were contemporary over roughly three centuries until the final abandonment of collective practices.⁵

The number of radiocarbon dates for collective graves in the Douro and Tagus basins is smaller than those related to single burials, even taking into account the plentiful evidence from the 'Vila Nova de São Pedro culture' in the lower Tagus (10 dates). Eleven out of the 16 dates of the joint series cluster between ca. 2450-2200 cal BCE (i.e. Humanejos, Camino de las Yeseras, El Castillejo, Verdelha dos Ruivos, São Pedro do Estoril, Poço Velho), matching the remarkable growth observed in the single and double burial series.⁶ However, after ca. 2200 cal BCE collective graves are hardly documented.

In the Southwest, the radiocarbon series is small ($n=8$) and shows a large internal distribution starting ca. 2700 (Olival da Pega and Herdade de Santa Margarida 3) and ending around 2300 cal BCE. The higher concentration is during the 24th century cal BCE; only one isolated date from the *tholos* tomb of Torre Centirã 2 falls slightly after 2200 cal BCE.

Finally, taking together the dates from the Levantine strip and the southeastern corner the main trend defines a range between ca. 2400-2200 cal BCE. Only five out of 19 dates fall above the upper limit of this range.⁷ Moreover, the few cases under the lower limit ca. 2200 cal BCE deserve attention. In the upper Guadalquivir valley (Marroquíes Bajos, Venta del Rapa) the collective ritual in large pits or hypogea seems to have lasted until the beginnings of the 2nd millennium cal BCE. On the other hand, the rich evidence of El Barranquete cemetery has been used to assert the continuity of the well-established Chalcolithic practice of extramural burial

⁵ Some collective inhumations are occasionally recorded after ca. 2300 cal BCE in the edge of the upper northern basin, as in Caseta de las Balanzas (GrN-16052: 3795±35 BP) and Faulo (GrA-13667: 3780±40 BP).

⁶ The long-lasting coexistence between both kinds of ritual has been underlined for the middle Tagus valley (Camino de las Yeseras) (Ríos, Liesau and Blasco 2014). This suggestion is also supported by other dates from collective graves of inner Iberia, as in El Tomillar (GrN-17344: 3780±100 BP) and El Perdido (Ua-41489: 3816±40 BP).

⁷ The date from Cova dels Diablets, one of the northernmost sites, is the earliest and it is also in agreement with the first single graves in the area. The second, from Llano del Jautón 1, should not be considered as symptomatic of any regional rupture because in the Southeast collective tombs are dated at least until 2200 cal BCE. The same could be said for the three dates from different graves in the mega-site of Marroquíes Bajos, meaning successive tomb cancellations without implying ritual discontinuity.

in *tholoi* throughout the Bronze Age⁸ (Aranda et al. 2018). Nevertheless, a review of the earliest layers from different *tholoi* tombs with unequivocal collective funerary use shows that there is only one radiocarbon date slightly after 2200 cal BCE (tomb no. 11, CNA-2406: 3730±35 BP), which matches with the earliest chronology for Argaric Early Bronze Age finds in the coastal lowlands of Almería and Murcia provinces.⁹ In El Barranquete there are several dates that fall after 2200 cal BCE as well, but they were obtained from samples associated with layers whose collective funerary character is unclear: they were placed stratigraphically above the initial collective deposits, either as intrusive single burials with El Argar grave goods or lacking reliable contextual data. Thus, the claim that *inside* the El Argar territory there was an extended duality in funerary ritual (new intramural single and double burials and, on the other hand, continuity in collective extramural monuments) is not supported by conclusive evidence.¹⁰ Instead, it is safer to suggest that the occasional reuse of former collective graves for burial purposes took place in the Argaric territory. In fact, this kind of burial practice involving the remains of former megalithic graves has been frequently attested elsewhere in Iberia throughout the Bronze Age and even later.¹¹

12.3.4. ABANDONMENT OF CHALCOLITHIC SETTLEMENTS

The radiocarbon series of the Douro and Tagus basins (N=15) seems to show many abandonments either in ditched enclosures (Las Pozas, Casetón de la Era, Góñez, Camino de las Yese-

ras), open villages or hamlets and exceptionally in caves (Barrocal Alto, Buraco da Pala, Bitarados, Aldeagordillo, La Atalaya, Aguas Vivas, Los Picos) throughout the range 2700-2400 cal BCE, although the highest density of dates spans between ca. 2650/2600 and 2500 cal BCE¹² (fig. 12.4).

The picture in the northwestern corner is poorer due to the archaeological problems to find and document open air sites. Nevertheless, the pattern of relatively early withdrawal shown in the Douro and Tagus valleys could have been shared here as shown by the recent date from A Devesa de Abaixo, ca. 2600 cal BCE, one of the few open air sites with a substantial radiocarbon series in the region (Vázquez and Prieto 2016: tabla 2).

Taking together the northwestern corner and the lower Douro valley, the beginning of some prominent new settlements is as meaningful as the abandonments in others.

a) In the lower Douro new hilltop settlements with monumental stone structures were built by 2700 cal BCE (Castanheiro do Vento, Castelo Velho and Crasto de Palheiros¹³). They show walled precincts with curved bastions that are reminiscent of other well-known examples extensively attested in southern Iberia (Jorge 2004). These settlements have long-lasting occupations until the third quarter of the 2nd millennium cal BCE.

b) The first mining activities in the Cantabrian mountains have been dated around the middle of the 27th century cal BCE (El Aramo, El Milagro). These mines played a key role in the copper supply of northwestern Iberia, probably including the northern Meseta (De Blas 2014). Here, the production of salt, perhaps also at a supraregional level, has been dated around 2400 cal BCE at Molino Sanchón II (Guerra et al. 2011).

Settlement abandonments (and some significant new sites and copper mines) in central and northwestern Iberia took place earlier than in the southern regions, where similar developments occurred between 2450 and 2200 cal BCE. The radiocarbon series of the lower Tagus is rather small (n=7) but includes some highly relevant

⁸ The large radiocarbon series available so far attests burial practices in El Barranquete until the Late Bronze Age (Aranda et al. 2018).

⁹ It should also be noted that the date CNA-2406 is younger than the most recent date for the associated site of El Tarajal (CSIC-224: 3820±50 BP). This chronological displacement questions the idea of social continuity.

¹⁰ The finding of Argaric objects in megalithic tombs can be traced occasionally inside the Argaric borders, as in the area of Gor-Gorafe (Granada), although always from poorly contextualised ancient diggings (Leisner and Leisner 1943). Extensive radiocarbon dating of some important Final Neolithic and Copper Age cemeteries in Almería (Los Millares, Las Churuletas, La Atalaya and Llano del Jautón) (Aranda et al. 2017, 2020) has not documented new funerary practices during Argaric times. On the contrary, some areas outside of El Argar territory, such as the upper Guadalquivir valley (Marroquies Bajos, Venta de Rapa) or the central Subbetic range (Pantano de los Bemejales) may have had collective funerary practices beyond 2200 cal BCE.

¹¹ The reuse of Neolithic/Chalcolithic megalithic tombs in later periods is by no means exceptional in Iberia (Castro et al. 1996; Lorrio and Montero 2004; García Sanjuán 2005; Costela 2015, 2016; Linares-Catela 2020).

¹² That is also the case for the last occupation of Covelinhos (Braga), which ended by 2500-2450 cal BCE (AA-63063: 3969±63 BP) (Lopes and Bettencourt 2017: table 1.2). Detailed survey in the Northern Iberian Plateau points to the abandonment of ditched enclosures by 2500 cal BCE (Delibes et al. 2015).

¹³ Castanheiro do Vento (Ua-18039: 4140±75 BP is the oldest date associated to the building of the large wall), Castelo Velho (reliable from Sac-1518: 4130±80 BP onwards) and Crasto de Palheiros (CSIC-1963: 4129±42 BP). Since all these dates were obtained from charcoal samples, they probably provide a *terminus post quem* for the different masonry structures.

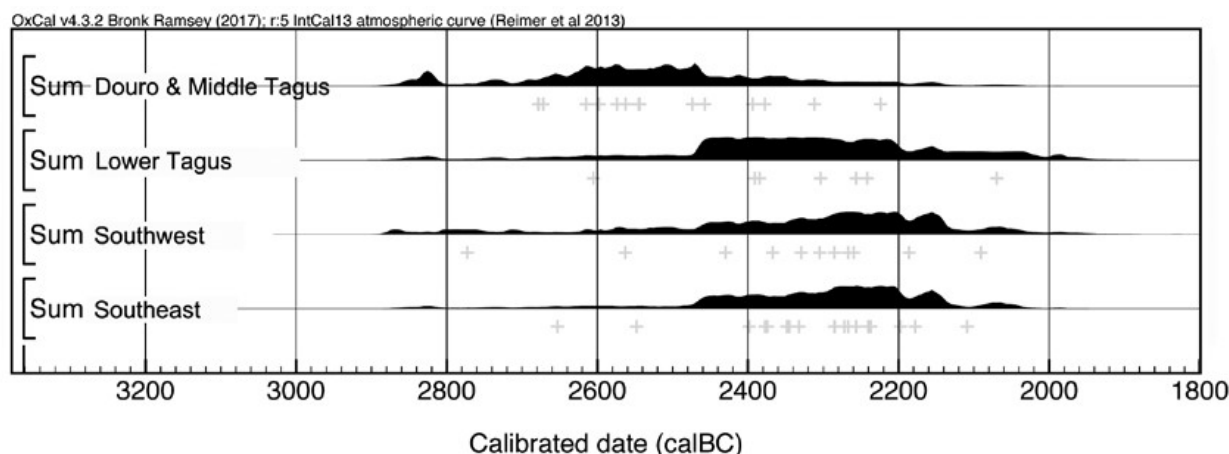


FIGURE 12.4. *Sum of probabilities of the radiocarbon series related to the abandonment of Chalcolithic settlements in Iberia (+ under graphs show median values of particular dates).*

sites, such as Leceia.¹⁴ Further south, the series has 12 dates, most of them falling after 2450 cal BCE and including key sites as La Pijotilla, San Blas, Cabezo Juré or Perdigões. In these two areas, only a few villages (i.e. Penha Verde, Porto Torrão) show a certain continuity slightly after 2200 cal BCE.

Finally, the Southeast series is the largest one from southern Iberia (n=19), including paramount Chalcolithic sites as Los Millares, Cerro de la Virgen, El Malagón and Marroquíes Bajos. Its internal distribution shows an especially dense interval covering the 23rd century cal BCE, just when most of the collective tombs in this region were being abandoned. After 2200 cal BCE only a few dates from settlements of inner Andalucía, such as Venta del Rapa and Peñas de los Gitanos, indicate some Copper Age continuity.

12.3.5. INTRA-REGIONAL OVERVIEW

In order to carry out internal comparisons, not all Iberian regions have reasonably good radiocarbon series concerning the three kinds of contexts considered here. Probably the Douro and Tagus basins offer the best grounds in this respect (fig. 12.5). Here, we find some of the earliest examples of individualized burial in Ibe-

ria, and from the 25th century cal BCE onwards a consistent trend in this kind of tombs is attested apparently shortly after the abandonment of a number of settlements in the middle basins (Díaz-del-Río et al. 2017). Interestingly, the new burials seem to have coexisted with the traditional collective graves, as these lasted until the end of 23rd century cal BCE (Blasco and Liesau 2019). By this time most of the outstanding Copper Age settlements in the lower Tagus were abandoned as well.

In the southwestern corner, most of the youngest dates for the abandonment of collective tombs and settlements point to the 24th and 23rd centuries cal BCE, whereas the main group of dates for individualized burials cluster from 2200 cal BCE onwards (fig. 12.6). Thus, the situation here differs from the Douro and Tagus basins both in absolute and relative terms: it seems that the abandonment of Copper Age funerary and residential structures had preceded the generalization of single tombs, although it is still difficult to say whether it was done after a hiatus.

The picture in southeastern Iberia resembles the southwest in that most of the individualized tombs are documented in relatively recent times from the 23rd century cal BCE on, that is, also clearly later than in central Iberia; in this sense, the main Argaric series started even more recently during the 21st century cal BC (fig. 12.7). The abandonment of collective tombs seems to have been more progressive than in the southwest, showing a drop in the 23rd century followed by a continuity in certain regions until the transition to the 2nd millennium cal BCE. Millaran and neighbouring Copper Age settlements seem to have been also abandoned during the 23rd century. Interestingly,

¹⁴ The situation in the multilayered settlement of Zambujal seems more complicated. On strictly quantitative grounds, the 14C series shows a discontinuity probably starting during the 23rd century (KIA-7259) and lasting at least until the late 21st century cal BCE (GrN-6668). In this case, the problematic transition between phases 4 and 5, before and after 2200 cal BCE, needs more well contextualised dates to be clarified (Kunst 2017).

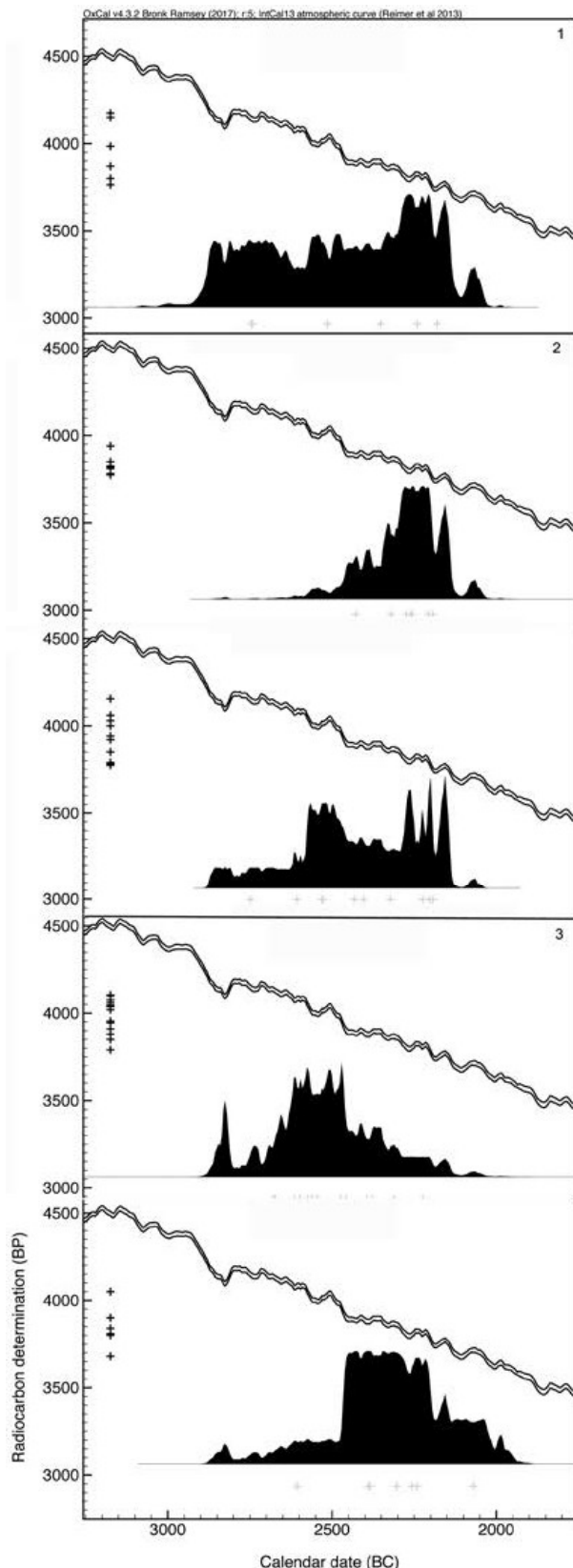


FIGURE 12.5. *Douro & Tagus basins (probability sum): (1) single/double burials; (2) last collective burials: Douro & Middle Tagus (up) and Lower Tagus (down); (3) end settlements: Douro & Middle Tagus (up) and Lower Tagus (down) (+ under graphs show median values of particular dates).*

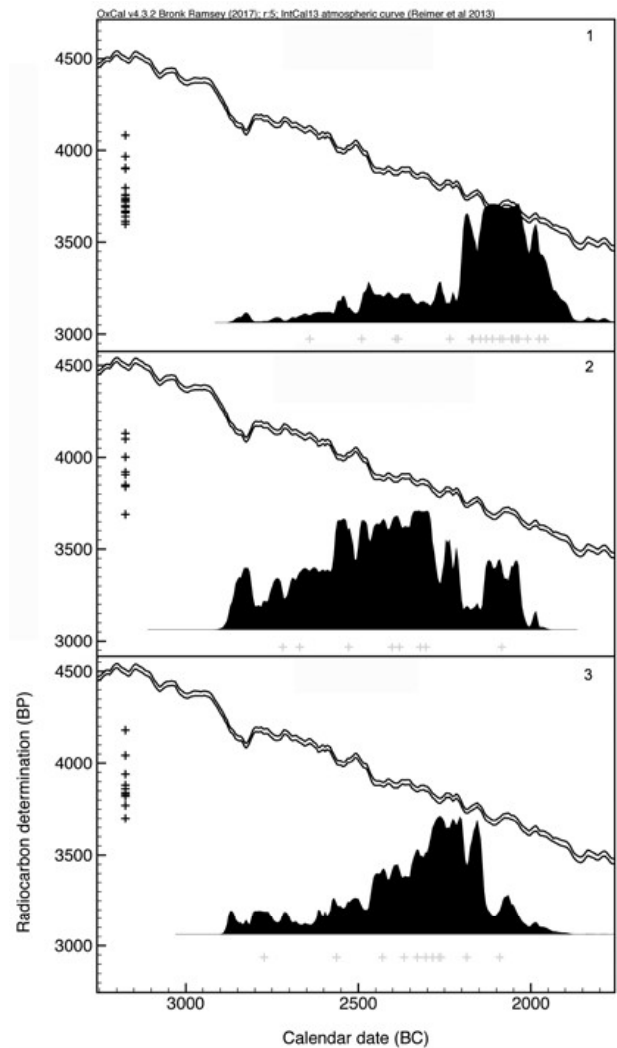


FIGURE 12.6. *Southwest (probability sum): (1) single/double burials; (2) last collective burials; (3) end settlements (+ under graphs show median values of particular dates).*

the oldest dates for the developing Argaric settlements in Almería and Murcia (La Bastida, La Almoloya, Lorca, Gatas, Fuente Álamo, El Argar or Punta de los Gavilanes) and for the new sites or occupations in the nearby regions of eastern Granada (Cerro de la Virgen III), inner Alicante (Mas del Corral, Mola d'Agres, Terlinques) and beyond (El Acequión¹⁵) usually point to the 22nd century cal BCE. Thus, short hiatus or sudden change are still likely dynamics (Lull et al. 2010: 90-91).

¹⁵ The earliest dates from Motilla del Azuer and Morra del Quintanar should be handled with caution due to their extremely wide standard deviations.

12.4. FINAL REMARKS

The regional radiocarbon series differ both in the number of dates and in their respective internal distribution. In spite of local shortages or gaps in the dating coverage of individual sites, some regional trends can be suggested.

From a general perspective, the earliest changes in funerary rituals and settlement patterns seem to have taken place in several regions of northern and central Iberia from around 2700 cal BCE onwards. The most consistent and reliable series showing the spread of single burials comes from the Douro and Tagus basins, whereas the end of collective graves is better attested in the upper and middle Ebro basin. A critical turning point has been identified around 2450 cal BCE, when the number of single burials in inner Iberia increased dramatically and many settlements were abandoned or remodelled.

Moreover, in the southern regions these transformations seem to have started around 2400 or 2300 cal BCE, with the exception of some earlier isolated cases. As in northern areas, the grave goods in the new types of tombs (when present) were not homogeneous. This fact prevents us from inferring the existence of a single social group (neither 'archaeological group' nor 'culture') behind the new funerary ritual.

Perhaps significantly, the permanent colonization of Majorca (Balearic Islands) took place just during the third quarter of the 3rd millennium cal BCE. Since the funerary rituals and settlement patterns in Majorca (and slightly later on in Minorca) were characterised by collective burial throughout the whole prehistoric sequence and by initially by open air and cave sites, it is tempting to see the first colonists as members of the Late Neolithic/Chalcolithic mainland communities perhaps reluctant to adopt new social relationships (Gili et al. 2006).

It seems likely that throughout Iberia the time span between the new burial rites and the abandonment of earlier settlements and collective graves was rather large, approximately between two and four centuries. At the very least, the emerging picture for the funerary social dimension shows periods of ritual coexistence. This means that major changes *eventually occur almost everywhere* in view of the prevalence of single burials in the Bronze Age, but the pace of change was not sudden/abrupt, except perhaps in southern Iberia (Lull et al. 2010, 2015).

The moment when the material replacement 'finally occurs' can be placed around 2200 cal BCE. This milestone date should be interpreted as a generalised turning point after a rather long period of change, diversity and interaction across Iberia.

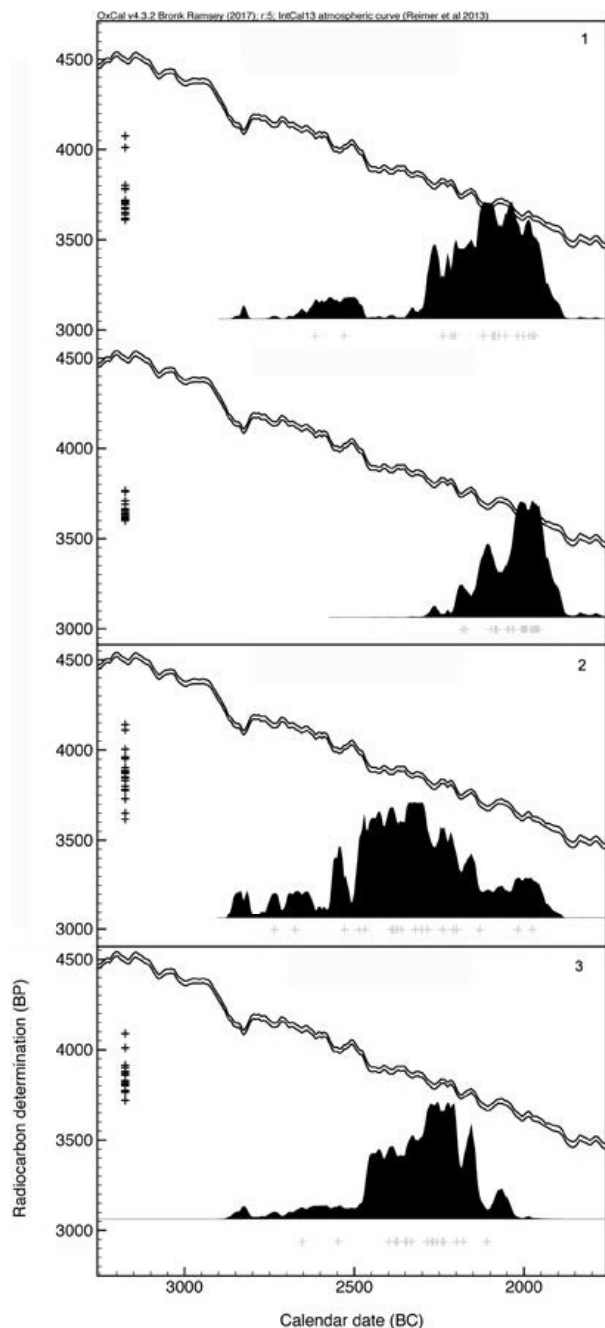


FIGURE 12.7. Southeast (probability sum): (1) single/double burials: non Argaric (up), Argaric (down); (2) last collective burials; (3) end settlements (+ under graphs show median values of particular dates).

After 2200 cal BCE, single burial was the predominant funerary ritual across Iberia. By contrast, settlement patterns were more diverse, from urban centres at the top of a ranked three or fourfold structure (El Argar) to mobile open-air villages and hamlets mainly in the lowlands (northern regions). Taking together the different lines of evidence, social diversity was characteristic of Early Bronze Age Iberia, ranging from State organizations in the

southeast to basically egalitarian ones in most of the regions.

The results presented here are not conclusive. It is clear that greater chronological accuracy is needed in the dating of well preserved and contextualized individual sites. Nevertheless, they offer valuable chronological hints for a general understanding of social dynamics during the Copper and Bronze Ages in Iberia.

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POST SCRIPTUM

After this contribution had been accepted, new significant radiocarbon series from the *tholoi* of Cardim 6 (Valera et al. 2019), Perdigões 4 (Valera and Wood 2020), several tombs from Los Millares (Molina et al. 2020) and Loma de Belmonte (Aranda et al. 2020) were noticed. Overall, the new results fit with the picture outlined here, that is, generalised cancellation of collective burials during the 23th century cal BCE in southern Iberia, closely followed by the earliest consistent series of dates associated with single/double burials.

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