# An Argaric Tomb for a Carpathian 'Princess'?

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Around 120 years ago, a burial was discovered in the Argaric settlement of San Antón, 60 km southeast of Alicante (Spain). Although it was similar to many others recorded during more than a century of research, some gold objects found made this burial exceptional in the Iberian Bronze Age funerary record. Based on the most recent archaeological data, this article reviews both the context and the whole set of grave goods. It also explores the intersocial relationships that these gold ornaments suggest, which directly or indirectly seem to point towards both eastern Mediterranean Europe as well as to the Carpathian Basin.

### Introduction

In the Iberian Peninsula, as in the rest of the European continent, priests, engineers and geologists carried out the first research in prehistory. Referring to the Bronze Age, the brothers Henri and Louis Siret (1890) stated the basis for the study of El Argar culture. However, during the early years of the twentieth century, other less significant figures also made notable contributions in this field. Special mention is due to the excavations of Jesuit priest Julio Furgús in the site of San Antón (Orihuela, Alicante, Spain), located at the northeastern end of the Argaric territory (Fig. 1), where nearly 800 tombs were excavated (Furgús 1902). Such a high number of graves led him to consider San Antón as a cemetery, without realizing that the burials were located under the floors of dwellings.

Furgús died suddenly in 1909, and never published a detailed inventory of the tombs. We have only one accurately described burial, including details about the disposition and sex of the deceased and the whole set of grave goods.

The tomb was described by Furgús as a medium-sized 'tumulus', with an oval-shaped, excavated inner chamber well delimited by stones where the large stones of the lid rested. Inside there was the skeleton of a woman, lying on her right side in a

flexed position, with her skull facing west. The surfaces of the arm and forearm bones were coloured in red and black, and the skull was 'completely black smeared' (Furgús 1905, 367; 1906, 238).

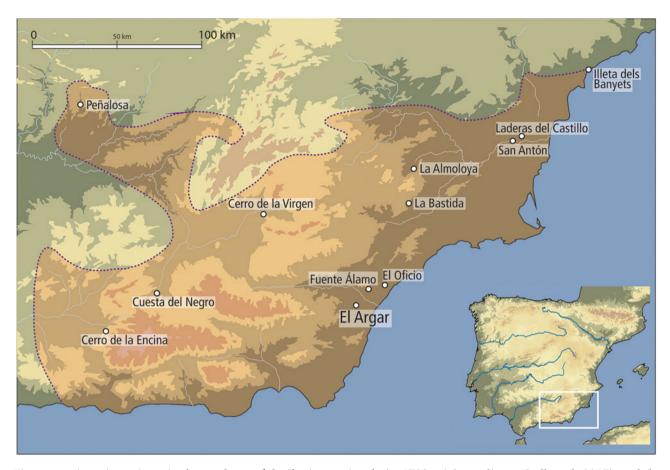
This wealth of detail allows us to evaluate this tomb within the framework of what we currently know about Argaric burial practices (López-Padilla *et al.* 2012).

# An outstanding Argaric burial in San Antón

Stone slab boxes, masonry cists, large storage pottery vessels and pits or small hypogea dug in the ground are the most common Argaric burial containers. The 'tumuli' described by Furgús have long been categorized as an example of masonry cists. The lids often collapsed over the burial chamber, giving a 'tumular' appearance to the assemblage (Lull 1983, 337; Siret 1905, 377). In any case, their grave goods are like the rest of known Argaric burials (Jover Maestre & López Padilla 1997, 83).

There are two photographs reproducing the set of grave goods at San Antón (Furgús 1905, 368, fig. 4; 369, fig. 5; 1906, 239) (Fig. 2). The two large silver spirals found on each side of the skull remain intact (Fig. 3a, b), but the ceramic vessel found next to the skull is missing. Furgús provided a small sketch of the complete vessel (Fig. 2b) based on a single large

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**Figure 1.** Argaric territory in the southeast of the Iberian peninsula (c. 1700 BC) (according to Lull et al. 2015), and the main settlements mentioned in the text.

piece (Fig. 2c), which clearly shows the typical midheight ridge line of a carinated Form 5,<sup>1</sup> albeit with a wide mouth diameter.

A set of tiny hollow gold perforated cones was found on the chest (Fig. 2h). Furgús recovered a total of 73, but some of them were lost during the excavation. Thus, the real exact number of pieces remains unknown. Nowadays, only 42 of these are still preserved<sup>2</sup> (Fig. 3c).

Three seashell beads and two small perforated ivory discs were also recovered (Fig. 2h). Unfortunately, these items cannot be identified or have been lost. A copper knife was found on the skeleton's waist, wrapped in a piece of cloth (Fig. 2g). It was considered lost, but it has been recently identified, although in a very poor state of preservation (Fig. 3d).

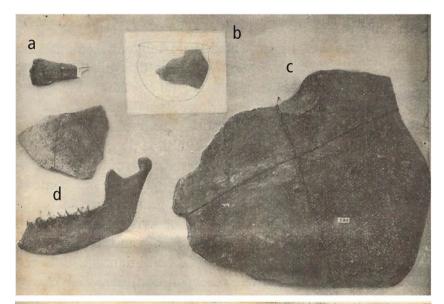
Near the knife, a copper awl still inserted into a bone handle was found (Fig. 2i), although both are also missing. Furgús mentions a poor-quality bone awl too (Fig. 2a), but it is more likely to be remains of the foreleg of a bovid or goat, that were often included as part of the grave goods in Argaric tombs (Andúgar *et al.* 2021; Siret & Siret 1890, 497).

The set of 20 'walnut-sized pebbles' located 'at the foot of the grave' (Furgús 1905, 370; 1906, 239) probably were not among the grave goods but stored in the dwelling in which the burial was placed.

## Archaeological context and chronology

We have compiled published data from 62 single tombs, all with grave goods comparable to that of San Antón: at least one earring and/or spiral of either gold, silver, copper, or bronze, a dagger or knife, and an awl (see Supplementary material).

Data indicate no association with any specific form of grave structure and a scarce presence of gold objects (two spirals from El Oficio cist 6 and the cones of San Antón). Yet silver is abundant, but only in the most outstanding tombs are singular silver objects, such as awls, awl handles, knife rivets and pommels, or headbands. More than 95 per cent of these burials contain at least one ceramic vessel,



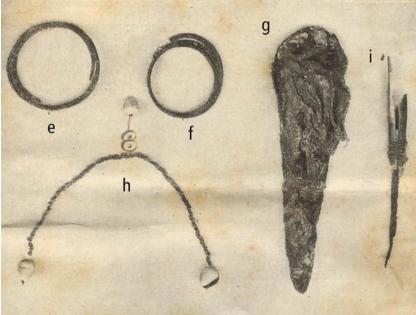


Figure 2. Grave goods published by Furgús (1905). (a) Bone awl (?); (b) Sketch of the ceramic vessel; (c) Piece of ceramic vessel; (d) Skull fragment and part of the jaw; (e, f) Silver earrings (sic); (g) Bronze dagger or knife wrapped in a cloth; (h) Necklace (sic) of gold cones, three seashells and two small perforated ivory discs; (i) Metal awl with bone handle.

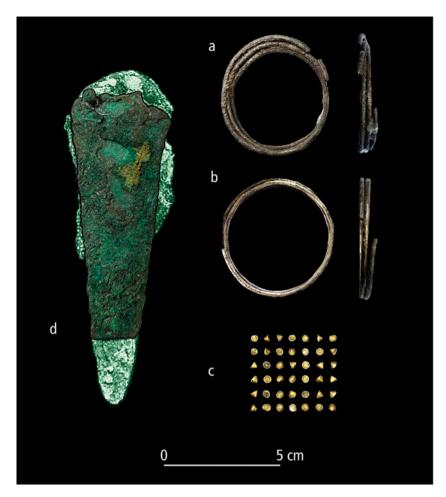
while 70 per cent of the cists and 81.1 per cent of the urns include two or more vases. Form 5 is the most frequent vessel type recorded in cists (45.9 per cent), while the biconical vessel of Form 6 was only identified in three cists (Fig. 4).

According to Lull and Estévez (1986, 450), 60 per cent of the cists and 51.4 per cent of the urns would belong to members of the Argaric ruling class. The others, without silver objects, but furnished with dagger/knife and awl, as well as some copper or bronze ornaments instead, would be 'full members' of the Argaric communities (Lull *et al.* 2011, 400).

We have data on the age of approximately two-thirds of the individuals, but barely less than half have provided information about sex. Among these, the predominance of women is unquestionable, as 92.6 per cent are female or probably female (Fig. 5).

Other data available (41 cases) expose the association of these grave goods set with adult women. Around 90 per cent are over 20 years of age at death, while women between 20 and 40 years old is certainly the largest group (44.3 per cent).

The skeleton from the tomb of San Antón has been lost. From a photograph of a piece of the skull



**Figure 3.** San Antón preserved grave goods. (a, b) Silver spirals; (c) Perforated gold cones; (d) Arsenic copper dagger with fabric remains attached.

and part of the jaw, we can deduce that the person buried was probably older than 12 and not of advanced age.<sup>3</sup> As far as sex determination is concerned, the lack of skeletal remains is a major handicap that we can only overcome by relying on a series of clues: the presence of a metal awl (already mentioned by the Siret brothers as typical for female burials: Siret & Siret 1890, 181; and later confirmed by strong data: Castro Martínez *et al.* 1994); the silver spirals on both sides of the skull; the colouring of the bones and, above all, the position of the body, lying on its right side, which is common in Argaric female burials (Lull *et al.* 2016, 45; Schubart 2004) but which was ignored by scholars at the time.

To all this we can add the sex determination published by Furgús, probably provided by the physician of the College of Santo Domingo.<sup>4</sup> He was the only person trained in the study of the human skeleton who was able to examine the skeletal remains from the tomb. The coincidence of his diagnosis with the sum of the other evidence

mentioned leads us to attribute a female identity to the buried individual with a high degree of probability.

Only three of the 62 tombs compiled have radiocarbon dates: Fuente Álamo cist 52, Cerro de la Virgen cist 21A and El Picacho pit 2 (Castro *et al.* 1994, 82, table 1; Molina González *et al.* 2014, 124, fig. 2). The tomb of San Antón could fit well into the chronological interval of 1900–1650 BC that these three burials point to.

The colouring of the skeletal bones (Furgús 1906, 238) is a feature that the tomb of San Antón also shares with many other Argaric burials. The Siret brothers put it in relation to the cinnabar used to dye the deceased's clothing or their shrouds (Siret & Siret 1890, 200). Subsequent studies further explored this issue (López-Padilla *et al.* 2012) and in the last years the use of cinnabar impregnations has been reported for the preparation process of the burial container itself (Schubart & Liesau Von Lettow-Vorbeck 2018).

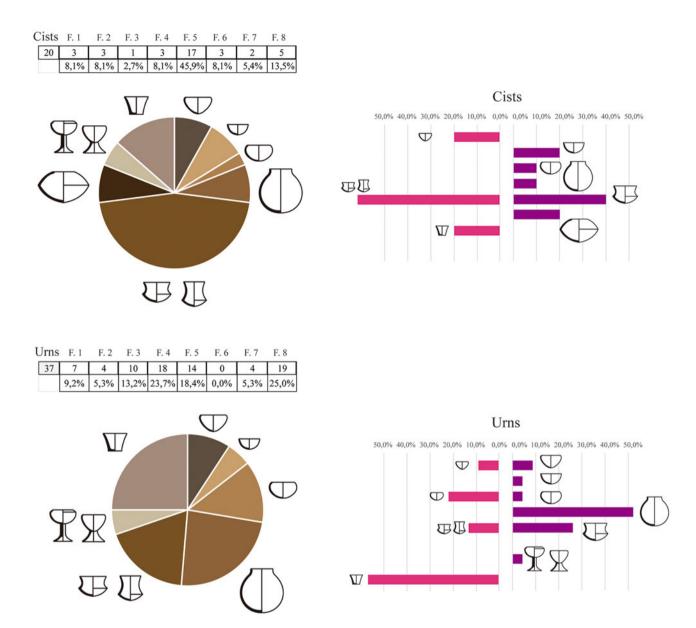


Figure 4. Percentage distributions of ceramic types found in the cist and urn analysed burials.

Hence, a woman of the Argaric ruling class was buried in the tomb of San Antón, along with all the typical elements of her high social status. But the tiny and perforated gold cones still represent today a *unicum* in the Argaric archaeological record.

# A unique Bronze Age gold jewellery in Early Bronze Age Iberia

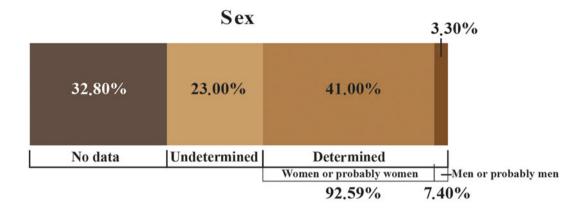
The scarcity of gold objects at El Argar is unusual compared to the extraordinary abundance of silver (Siret & Siret 1890, 499). Fewer than 30 Argaric gold artefacts are currently known, mostly from

less than 20 tombs, which is an extremely low quantity compared to all known Argaric tombs—about 1500—or even only to those with silver artefacts recorded (Lull *et al.* 2014, 573; Murillo-Barroso 2013, 403).

The simplicity in design and manufacture of the artefacts is remarkable. Most Argaric gold and silver jewellery consists of wires, mainly of circular or oval section, twisted and bent on themselves until their ends join or overlap to form a spiral (Fig. 6a–f).

Very few objects required greater technical skills in their production process: the bracelet from tomb 75 of Fuente Álamo (Pingel 1992a, 8, fig. 6d); some

Total	No data	Undetermined	Probably woman	Woman	Man / probably man
62	20	14	7	18	2
	32.80%	23.00%	11.50%	29.50%	3.30%
			41.00%		



Total	No data	Infant	Sub-adult	Adult	Senior
62	20	2	2	27	10
	32.80%	3.30%	3.30%	44.30%	16.40%
		6.60%			

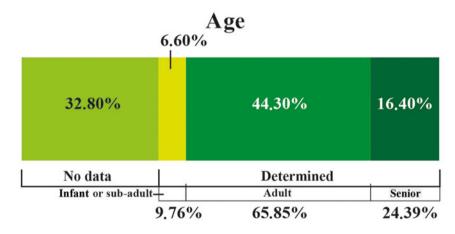


Figure 5. Percentage representation of the age and sex data of the 62 analysed burials.

small spools with flared ends (Fig. 6g–h) (Perea 1991, 60) and the diadem found at Cerro de Plaza de Armas, in Caravaca, made from a large, hammered gold sheet, cut-out following the same design like other similar Argaric diadems, but made of silver (Pingel 1992a, 16) (Fig. 6i–j).

However, the tiny, perforated cones from this tomb at San Antón (Fig. 7) are the only known Argaric jewellery made using the stuffing technique

(Perea 1991, 87; Simón García 1998, 308) and, so far, the only known with no silver equivalent, which becomes the most remarkable feature.

They were once related to the gold and silver earlobe-plug earrings from El Argar and to the southwest Bronze Age 'tutuli' (Pingel 1992b, 43, 45 n. 217, 48). However, besides their big differences in shape and size, recent research indicates that the typical Argaric earlobe-plug gold earring later



Figure 6. Silver and gold Argaric jewellery. (a, b) Silver and gold bracelets; (c, d) Silver and gold rings; (e, f) Silver and gold spirals; (g, h) Silver and gold ear-lobe dilator earrings, with silver hoops inside; (i, j) Silver and gold diadems with discoidal attachment.

became the 'trumpet'-shaped 'tutuli', dated to post-Argaric times, in the so-called Late Bronze Age (Hernández-Pérez *et al.* 2014, 603).

Thus, unequivocal associations between the small, perforated cones from San Antón and other gold objects of contemporary chronology in the Iberian peninsula are still questionable.

# An extraordinary assemblage of gold objects

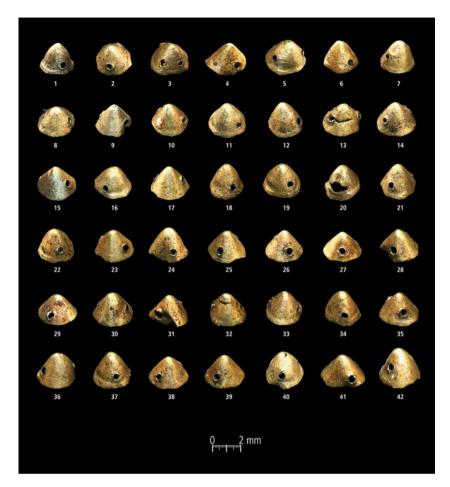
Dirk Brandherm (1996, 52) was the first researcher to point out the close resemblance of the San Antón golden cones and the Kápolnahalom hoard in northeastern Hungary, where 30 small gold perforated cones were found (Fig. 8) (Csányi *et al.* 2000, 154).

The use of a wide variety of gold and bronze objects sewn into textiles to decorate clothing is a long tradition in the Bronze Age of central and southeastern Europe (Wels-Weyrauch 1989) dating back at least to the fifth millennium BC (Leusch *et al.* 2014)

and surviving until the Late Bronze Age (Szabó 2019, 69).

These objects are described as 'buttons' (*Knöpfe*), 'humps' (Buckeln) or tutuli (Găvan 2015, 120). All of them have a hemispherical or conical shape as well as two small opposite perforations on the base, near the rim, to attach them to clothing. There are a wide range of references. In the burial site of Nagybátony, north of Hungary, a large quantity of that kind of small pieces were probably stitched to the garments of the buried (Gimbutas 1965, 287, 294, fig. 201.21). A similar set of copper items was found in Pötréte, Hungary, in 1967, which were considered from clothing lost or thrown into the swamp (Müller 1972, 72). An assemblage of 70 bronze hemispherical, perforated small plates, found in Periam, in Romania, was considered as 'dowry' used to ornament clothing for a marriage or a burial (Gogâltan 1999, 173–4, 348, fig. 36).

These objects are frequently present in hoards from sites dating to the Otomani-Füzesabony



**Figure 7.** Set of 42 gold hollow perforated cones from San Antón (Orihuela, Alicante, Spain).

cultural complex and particularly to the so-called 'Koszider Horizon' (end of the Middle Bronze Age in Hungarian terminology). In some cases, their small number and larger size do not match with the tiny cones from San Antón (Găvan 2015, 323, pls 40.1–21, 41.1–17). In others, their dimensions are similar, but their number is much larger. This is the case of Včelince, where more than 500 small bronze cones were hidden inside a ceramic vessel (Găvan 2015, 120).

The Kápolnahalom hoard is linked to the end of the Hatvan-Kultur classic period and the rise of the typical elements of the Füzesabony complex on the site, dating approximately to 2000 BC (Csányi *et al.* 2000, 158). In Spišský Štvrtok, a fortified settlement of the Otomani-Füzesabony complex in Slovakia, a total of 11 hoards were found within the dwellings. Some of these included tiny gold cones identical to those recovered from Kápolnahalom (Oravkinová & Vladár 2019). Unfortunately, these contexts cannot shed light concerning the way gold cones were used in relation to personal ornament. Other sources are needed for that purpose.

Some clay figurines from Lower Danube show the hems of skirts and sleeves and part of hats or headscarves decorated with this type of small cones (Schumacher-Matthäus 1985). However, the best information came from single graves at some Carpathian Basin sites (Szabó 1997, 61, 65, figs 7–8). Yet the Nižná Myšl'a cemetery, in Slovakia, has provided the most valuable information at this regard.

According to the published information (Olexa & Nováček 2013), 30 of almost 800 excavated burials at this Otomani-Füzesabony site included more than 300 small semispherical or conical pieces with perforations on the sides, more than 80 per cent of them found in female burials. Nearly 200 of those were made of bronze and 144 of gold, but the gold ones came from only six female burials whose grave goods indicate a high social class.

The gold cones were mainly located on the collarbones (Fig. 9); only one of the women wore one of them decorating the top of a hat or headdress (Nováček 2010, 38). In burials 123 and 330 the cones were in parallel rows, likely sewn to the hem of the dress neck (Nováček 2017, 45, tab. 59.3; 122,



**Figure 8.** Hollow perforated gold cones from the Jászdozsa-Kápolnahalom hoard (diam. 4–5 mm). Damjánich János Múzeum (Szolnok, Hungary). (Photograph: Péter Makrai.)

tab. 160.4). Obervation through electronic microscope reveals the use of stuffing from a moulded sheet, discarding wrought technique (Mihok *et al.* 1998, 80).

There are undoubtedly resemblances with the San Antón burial in both design and manufacture of the cones, and their distribution on the skeleton. In addition, the chronology is similar, as the Otomani-Füzesabony complex runs contemporary to Argaric society, based on radiocarbon dates (Jaeger *et al.* 2022).

Consequently, it is worth posing new questions about this unique burial from San Antón, found more than a hundred years ago 2000 km further away from the Carpathian Basin, where the most numerous and analogous references are observed.

# Discussion: a Bronze Age Carpathian 'princess' in the Argaric far west?

The six female burials from Nižná Myšl'a clearly share some outstanding features with that of San Antón: they are all adult women of the highest social status, buried with small gold cones sewn into the collars of their dresses. The 40 gold cones from grave 404 in Nižná Myšl'a are about 6 mm in diameter and the total weight is approximately 3.45 g (Nováček 2017, 95),<sup>5</sup> while the 42 cones from San Antón are just 4 mm in diameter and weight just

1.5 g (Simón García 1998, 29). But we know that Furgús initially collected 73, and it is sure that more were lost during the excavation. So, it is likely that there were twice as many gold cones in the tomb of San Antón as in grave 404 at Nižná Myšl'a, and the amount of gold used could have been the same.

Preliminary metallographic composition analysis of the small gold cones from San Antón shows a marked homogeneity. All of them have an almost identical gold:silver ratio, with values of 80 per cent Au:18 per cent Ag, which points to one and the same single gold–silver alloy (electrum). This does not differ too much from the Nižná Myšl'a cones analysed (Mihok *et al.* 1998, 82, table 1), although there the gold content seems to be slightly higher and diverse (see Supplementary material).

At present, data on the metallographic composition of Early Bronze Age gold artefacts, both Argaric and from the Carpathian Basin, are still scarce. For the Iberian peninsula, there is little more information than that provided long ago by Hartmann (1982), and most of it comes from the site of San Antón itself (Simón García 1998). Hartmann already pointed out that the two gold wires from the El Argar site analysed by him (Au 1795 and 1796) had in common a high silver content—around 25 per cent—and a low or non-existent presence of tin. These characteristics defined his A3 gold type, which was very widespread in the Danube area and in central and



**Figure 9.** Gold objects from the grave goods of Nižná Mysl'a tomb 404 (photographs: Institute of Archaeology in Nitra; Slovak Academy of Sciences) and sketch of the burial with the distribution of the grave goods (adapted from Nováček 2017).

northern Europe (Hartmann 1982, 10). The lack of evidence in the intermediate areas between these regions and the Iberian Peninsula—particularly southern France—prevented him from proposing any hypothesis as to their possible relationship.

Perhaps the gold bracelet found by the Siret brothers in tomb 1 of Fuente Álamo could be added to the same type A3. This was one of the few gold objects they analysed, and its composition also showed a high percentage of silver—25.74 per cent—although we do not know its tin content (Siret & Siret 1890, 296). In any case, the archaeological value that can be attributed today to the gold types identified by Hartmann is questionable, and the data obtained from the spectrographic analyses of the San Antón and Nižná Myl'a gold cones show that in neither case do they reach silver and tin contents within the values established by Hartmann for his type A3.

The latest research on the origin, production and circulation of Copper and Bronze Age gold artefacts in the Carpathians is still awaiting publication (Dani *et al.* 2019; 2022). In any case, it has been shown how difficult it can be to determine the origin of the veins from which the gold used to make ancient artefacts came (Pernicka *et al.* 2014).

Regarding the rest of the grave goods and burial rite, they are consistent with the funerary practices of each of these societies. Nevertheless, while garments decorated with gold cones on the chest and neck are common and distinctive among Otomani-Füzesabony high-class women—and perhaps specifically, married women—for the Argaric culture, the case of the San Antón tomb is unique and extraordinary.

When we first dealt with this exceptional set of gold objects, we related it with an interconnected local and regional exchange circuit (López-Padilla 2006, 43). This could explain other extraordinary finds in the region, like the ivory mount from Illeta dels Banyets, in Alicante, whose design is reminiscent of some others from both Mycenaean Greece (the tomb *iota* from Circle B of Mycenae) and the southeast of Great Britain (Bush Barrow mound, Wessex) (Brandherm 1996, 50–51). So far, the evidence seems to point to the eastern Mediterranean area as the most likely origin (López-Padilla 2011, 463–4, fig.V.2.116–117) (Fig. 10).

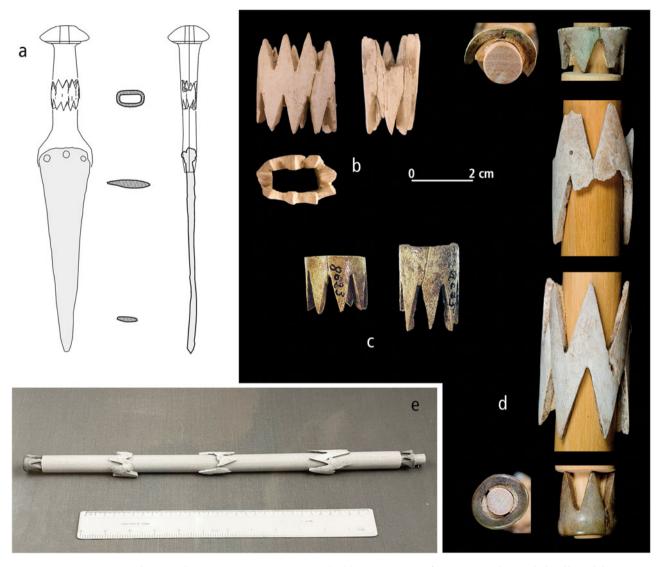
In the early 1970s, the existence of Argaric 'Mediterranean relationships' in the second quarter of the second millennium BC was proposed (Schubart 1976). Now, recent archaeogenetic studies point out that the Argaric populations show a small but significant genetic material contribution of Mediterranean origin, among a genetic Central

European base shared by the entire Bronze Age population of Iberia—although its weight in the Argaric society was remarkable but not paramount (Villalba-Mouco *et al.* 2021). Although this contribution could have taken place in Neolithic times and remain in the genetic profile of the Copper Age populations of the southeast, it can also be explained by the arrival—or occasional arrivals—of populations from the central Mediterranean. This hypothesis is becoming increasingly plausible due to data showing close genetic ties to populations from the central Mediterranean and North Africa of one of the men buried in the Argaric settlement of Lorca, in Murcia (Villalba-Mouco *et al.* 2021, fig. 5C).

This study also invites qualification, if not rethinking, of the stated hypothesis about matrilocality in Argaric society (Lull *et al.* 2016, 38), since preliminary results point to the opposite (Villalba-Mouco *et al.* 2022). The movement of women between settlements, rather than men, is much more consistent with what is known so far in the European Bronze Age framework (Frei *et al.* 2017; Knipper *et al.* 2017), including the Carpathian Basin, particularly in the case of women of high social status (Cavazzuti *et al.* 2021; Jaeger *et al.* 2021).

It is unlikely that a Carpathian goldsmith would have travelled to the southeast of the Iberian peninsula to make this type of gold ornament for a dress. It is also unlikely that a local goldsmith would have copied them for the Argaric elites, because of the obvious lack of tradition in both their production and use in this part of western Europe. The fact that no silver equivalent has ever been found, so far, is very significant evidence in this sense. This also makes it unlikely that the dress was a gift sent from the far side of Europe for an Argaric 'princess', although this cannot be ruled out in light of the growing evidence of Bronze Age textile trade and exchange (Bergerbrant 2019). Argaric funerary practices meet strict criteria, and the apparent differences in the choice of gold and silver jewellery between Argaric men and women has been frequently discussed (Perea 2012, 92).

Although few, there are examples of gold used as hair ties in some individual burials of women and as earrings in others of men, but, above all, there are many examples of male burials with silver jewellery (Lull *et al.* 2014, 573; Murillo-Barroso 2013, 414). The record points to more complex patterns, which considered both the type and material of each object. For the time being, the scarce data indicate that it is gold bracelets—and probably also ivory ones (López Padilla 2011, 459)—which were forbidden in female tombs (Perea 2012, 91).



**Figure 10.** Bronze Age bone and ivory settings in Europe. (a, b) Ivory setting for a copper dagger hilt, Illeta dels Banyets (Alicante, Spain); © Bone setting for a wooden pole or staff, Iota tomb, Circle B, Mycenae (Argolid, Greece); (d, e) Bone setting for the handle of a ceremonial mace, Bush Barrow (Normanton Down, England).

Therefore, all the Argaric funerary rules—type of burial, arrangement of the body and grave goods—typical of the highest social hierarchy were strictly observed in the tomb of this young woman, buried in San Antón, wearing a dress decorated in the 'eastern' style of the Danubian area sewn with small gold cones.

It seems reasonable to assume that, in accordance with the Argaric practice of exogamy and patrilocality, as in other parts of Bronze Age Europe, women arriving from other communities would have been forced to integrate fully into the social practices of their husbands' community. This would have been the case for this woman, and undoubtedly the only reason that her exotic dress

could have accompanied her to the grave is that this gold jewellery did not contravene any Argaric rules about its use in high-ranking female burials.

The bejewelled clothing of this woman probably then would have been as exotic as it is still today in the Iberian Bronze Age record. If it accompanied the woman in her tomb as a testimony of her remote place of origin, certainly the other grave goods would denote her fulfilling integration as a prominent member of the Argaric society. If that was the case, her role in developing relationships and social interactions between elites from both ends of the Mediterranean throughout the first half of the second millennium BC is undeniable.

#### Conclusion

The work we present here reinforces, with new arguments, the hypothesis that suggested some kind of inter-social relations between the southeast of the Iberian peninsula and the eastern area of Europe, based on these unique tiny gold jewels found in the Argaric territory. This hypothesis was launched at the end of the last century, but work on it did not continue in the following decades. The existence of Mediterranean contacts and 'influences' in the shaping of the Argaric culture from 1800 BC onwards was by no means a new idea. It dates back to classic works from the 1970s, in which a foreign origin for some genuinely Argaric elements —such as the silver diadems with disc-shaped appendix, high foot cups and even the practice of burial inside large ceramic jars—was proposed (Schubart 1976). In the last 40 years, additional evidence, mentioned here, has been sporadically collected, and we have to add other supposed 'imports' such as certain decorated bronze daggers, foreign to the Argaric metallurgical tradition, for which a Central European origin has been suggested (Montero et al. 2019, 20). All this, however, speaks only of potential 'imports', with no news so far of Argaric 'exports' of any kind outside the peninsula. Undoubtedly, circulation of raw Argaric silver to eastern Europe, in exchange for manufactured products, is a perfectly plausible hypothesis that, however, leaves open the question of how these transactions were actually carried out and who the agents involved might have been.

The possibility that such exchanges were under the cover of arranged marriages between prominent members of Argaric society and other European Bronze Age societies—such as those of the Carpathian area—is, obviously, mere speculation; at least until we have access to verifiable evidence, which fortunately seems more and more plausible every day. Until that happens, we must keep the question mark in the title of this paper.

## **Notes**

- The H. and L. Siret (1890) typological classification of Argaric pottery, which recognized eight basic types of vessels, has remained in use since the end of the nineteenth century, albeit with various updates (i. e. Lull 1983; Schuhmacher & Schubart 2003).
- 2. Until the early 1990s, however, the number of preserved cones was 44 (Simón García 1998, 29).
- 3. M. Paz de Miguel pers. comm., 15 May 2023.
- 4. As he had done on previous occasions (Furgús 1902, 759).

5. The weight of the cones found in tombs 353 and 386 is also very similar, at 3.55 g and 3.40 g, respectively (Nováček 2017, 95).

# Acknowledgements

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# Supplementary material

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#### References

- Andúgar, L., E. Celdrán, M.I. Fregeiro, V. Lull, R. Micó Pérez, C. Oliart & C. Rihuete-Herrada, 2021. Las ofrendas de fauna en tumbas argáricas: nuevas perspectivas desde La Almoloya y La Bastida (Murcia) [Faunal offerings in Argaric tombs: new perspectives from La Almoloya and La Bastida (Murcia, Spain)]. Trabajos de Prehistoria 78(1), 104–20.
- Bergerbrant, S., 2019. Wool textiles in the early Nordic Bronze Age: local or traded?, in *The Textile* Revolution in Bronze Age Europe: Production, specialisation, consumption, eds S. Sabatini & S. Bergerbrant. Cambridge: Cambridge University Press, 255–73.
- Brandherm, D., 1996. Zur Nordprovinz der El Argar-Kultur [About the northern province of the El Argar culture]. *Madrider Mitteilungen* 37, 37–59.
- Castro Martínez, P.V., R.W. Chapman, S. Gili Suriñac, et al., 1994. Tiempos sociales de los contextos funerarios argáricos [Social timing of Argaric funerary contexts]. Anales de Prehistoria y Arqueología 9–10 (1993–94), 77–105.
- Cavazzuti, C., T. Hajdu, F. Lugli, et al., 2021. Human mobility in a Bronze Age Vatya 'urnfield' and the life history of a high-status woman. PLoS ONE 16(7), e0254360.
- Csányi, M., I. Stanczik & J. Tárnoki, 2000. Der bronzezeitliche Schatzfund von Jászdózsa-Kápolnahalom [The Bronze Age treasure find of Jászdózsa-Kápolnahalom]. Acta Archaeologica Academiae Scientiarum Hungaricae 51, 147–67.
- Dani, J., Z. Kertész, I. Szathmári, J.G. Tarbay, Z. Szikszai & V. Kiss, 2019. Investigations of gold metallurgy of Copper and Bronze Age in the Carpathian Basin. Abstract in 5th International Conference on Archaeometallurgy in Europe, University of Miskolc, Hungary, 19–21 June 2019.
- Dani, J., Z. Kertész, J.G. Tarbay, A. Angyal, Z. Szikszai & V. Kiss, 2022. Analyses of prehistoric gold artefacts from the Carpathian Basin. Paper in International Symposium on Archaeometry, *Lisbon*, 16–20 May 2022
- Frei, K.M., C. Villa, M.L. Jørkov, *et al.*, 2017. A matter of months: high precision migration chronology of a Bronze Age female. *PLoS ONE* 12(6), e0178834.
- Furgús, J. 1902. La edad prehistórica en Orihuela [The prehistoric age in Orihuela], in *Historia de Orihuela* [History of Orihuela] (Tomo II. Anexo III), Orihuela: E. Gisbert-Ballesteros., 708–61.
- Furgús, J. 1905. Tombes préhistoriques des environs d'Orihuela (Province d'Alicante, Espagne) [Prehistoric tombs from the surroundings of Orihuela (Province of Alicante, Spain)]. *Annales de la Société d'Archéologie de Bruxelles* 13(3–4), 359–70.
- Furgús, J. 1906. Sepulturas prehistóricas de la provincia de Alicante [Prehistoric burials of the province of Alicante]. Boletín de la Sociedad Aragonesa de Ciencias naturales 5(10), 235–46.

- Găvan, A., 2015. Metal and Metalworking in the Bronze Age Tell Settlements from the Carpathian Basin. Cluj-Napoca: Mega Publishing House.
- Gimbutas, M., 1965. Bronze Age in Central and Eastern Europe. The Hague: Mouton.
- Gogâltan, F., 1999. Bronzul timpuriu şi mijlociu în Banatul românesc şi pe cursul inferior al Mureşului. I. Cronologia şi descoperirile de metal [The Early and Middle Bronze Age in Romanian Banat and in the lower Mureş. Chronology and metal finds]. Timisoara: Editura Orizonturi Universitare.
- Hartmann, A., 1982. Prähistorische Goldfunde aus Europa II. Spektralanalytische Untersuchungen und deren Auswertung. Berlin: Gebr. Mann.
- Hernández-Pérez, M.S., G. García-Atiénzar & V. Barciela-González, 2014. The treasures of Villena and Cabezo Redondo, in *Metalle der Macht Frühes Gold und Silber/Metals of power Early gold and silver*, eds H. Meller, R. Risch & E. Pernicka. (Tagungen des Landesmuseums für Vorgeschichte Halle Band 11/2.) Halle: Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt/Landesmuseum für Vorgeschichte Halle, 593–607.
- Jaeger, M., M. Stróżyk, L. Olexa & T. Nováček, 2021. Dating the ladies: spatio-temporal development of the Early Bronze Age cemetery at Nižná Myšl'a (Slovakia). Documenta Praehistorica 48, 340–53.
- Jaeger, M., M. Stróżyk & L. Olexa, 2022. Society in transition: cultural change in the Early Bronze Age cemetery at Nižná Myšl'a in the light of absolute chronology. *Radiocarbon* 65(1), 135–54.
- Jover Maestre, F.J. & J.A. López Padilla, 1997. *Arqueología de la muerte. Prácticas funerarias en los límites de El Argar* [The archaeology of death. Funerary practices in the boundaires of El Argar]. Alicante: Publicaciones Universidad de Alicante.
- Knipper, C., A. Mittnik, K. Massy, et al., 2017. Female exogamy and gene pool diversification. Proceedings of the National Academy of Sciences 114(38): 10083–8.
- Leusch, V., E. Pernicka & B. Armbruster, 2014. Chalcolithic gold from Varna: provenance, circulation, processing, and function, in *Metalle der Macht Frühes Gold und Silber/Metals of power Early gold and silver*, eds H. Meller, R. Risch & E. Pernicka. (Tagungen des Landesmuseums für Vorgeschichte Halle Band 11/I.) Halle: Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt/Landesmuseum für Vorgeschichte Halle, 165–82.
- López-Padilla, J.A. 2006. Marfil, oro, botones y adornos en el área oriental del país de El Argar [Ivory, gold, buttons and ornaments in the eastern area of the El Argar country]. *MARQ. Arqueología y Museos* 1, 25–48.
- López-Padilla, J.A. 2011. Asta, hueso y marfil. Artefactos óseos de la Edad del Bronce en el Levante y Sureste de la Península Ibérica (c. 2500–c. 1300 cal BC) [Antler, bone and ivory. Osseous artefacts from the Bronze Age in the Levant and southeast of the Iberian

- peninsula (c. 2500-c. 1300 cal BC)]. (Museo Arqueológico de Alicante, Serie Mayor 9.) Alicante: MARQ.
- López-Padilla, J.A., M.P. De Miguel-Ibáñez, M. Arnay De La Rosa, L. Galindo-Martín, C. Roldán-García & S. Murcia-Mascarós. 2012. Ocre y cinabrio en el registro funerario de El Argar [Ochre and cinnabar in the El Argar funerary register]. *Trabajos de Prehistoria* 69(2), 273–92.
- Lull, V. 1983. La 'cultura' de El Argar. (Un modelo de estudio de las formaciones económico-sociales prehistóricas).
  Barcelona: Ediciones Akal.
- Lull, V. & J. Estévez. 1986. Propuesta metodológica para el estudio de las necrópolis argáricas [Methodological proposal for the study of the Argaric cemeteries], in *Homenaje a Luis Siret (1934–1984)*, ed. F. Olmedo. Cuevas de Almanzora (1984) Actas del Congreso. Sevilla: Junta de Andalucía, 441–52.
- Lull, V., R. Micó, C. Rihuete & R. Risch, 2011. El Argar and the beginning of class society in the western Mediterranean, in *Sozialarchäologische Perspektiven:* Gesellschaftlicher Wandel 5000–1500 v.Chr. zwischen Atlantik und Kaukasus, eds S. Hansen & J. Müller. Berlin: Deutsches Archäologisches Institut/Von Zabern, 381–414.
- Lull, V., R. Micó, C. Rihuete & R. Risch, 2014. The social value of silver in El Argar. *Tagungen des Landesmuseums für Vorgeschichte Halle* 11(2), 557–6.
- Lull, V., R. Micó, C. Rihuete & R. Risch, 2015. Transition and conflict at the end of the 3rd millennium BC in south Iberia, in 2200 BC Ein Klimasturz als Ursache für den Zerfall der Alten Welt?/2200 BC 7. Mitteldeutscher Archäologentag vom 23. Bis 26. Oktober 2014 in Halle (Saale). Tagungen des Landesmuseums für Vorgeschichte Halle 12/1, 365–407.
- Lull, V., R. Micó, C. Rihuete-Herrada & R. Risch, 2016. Argaric sociology: sex and death. *Complutum* 21(1), 31–62.
- Mihok, L., L. Olexa & J. Briančin, 1998. Production of Bronze Age gold objects. *Carpatica-КАРПАТИКА* 5, 77–89. https://dspace.uzhnu.edu.ua/jspui/handle/ lib/18619
- Molina González, F., J.A. Cámara-Serrano, J.A. Afonso Marrero & T. Nájera Colino, 2014. Las sepulturas del Cerro de la Virgen (Orce, Granada). Diferencias cronológicas y diferencias sociales [The graves of Cerro de la Virgen (Orce, Granada). Chronological and social differences]. Revista Atlántica-Mediterránea de Arqueología Social 16, 121–42.
- Montero, I., M. Murillo-Barroso & D. Hook, 2019. La producción de bronces durante El Argar: frecuencia y criterios de uso [The production of bronzes during El Argar: frequency and criteria of use]. *Boletín del Museo Arqueológico Nacional* 38, 9–26.
- Müller, R., 1972. A pötrétei késő bronzkori kincslelet. Der spätbronzezeitliche Schatzfund von Pötréte [The

- Late Bronze Age treasure find from Pötréte]. Veszprém Megyei Múzeumok Közleményei 11, 59–74.
- Murillo-Barroso, M., 2013. Producción y consumo de plata en la península ibérica. Un análisis comparativo entre la sociedad argárica y los primeros asentamientos orientalizantes [Silver production and consumption in the Iberian Peninsula. A comparative analysis between Argaric society and the first orientalising settlements]. Doctoral thesis, Universidad de Granada.
- Nováček, T., 2010. Pohrebisko otomansko-füzesabonyského kultúrneho komplexu na lokalite Nižná Myšľa materiál prvých 300 hrobov [Graveyard of Otomany-Füzesabony Cultural Complex in Nižná Myšľa Artefacts of the First 300 Graves]. Master's thesis, Masaryk University. https://theses.cz/id/xeno2b/
- Nováček, T., 2017. *Vyhodnotenie materiálu pohrebiska otomansko-füzesabonyského kultúrneho komplexu v Nižnej Myšli (hroby 1–792)* [Analysis of Otomany-Füzesabony cultural complex necropolis in Nižná Myšl'a (graves 1–792)]. Dissertation, Masaryk University. https://theses.cz/id/noyrkp/
- Olexa, L. & T. Nováček, 2013. *Pohrebisko zo staršej doby bron- zovej v Nižnej Myšli*. Nitra: Archeologický Ústav
  Slovenskej Akadémie Vied.
- Oravkinová, D. & J. Vladár, 2019. The phenomenon of hoarding at the fortified settlement in Spišský Štvrtok, in *Beyond Divides The Otomani-Füzesabony Phenomenon*, eds K.P. Fischl & T.L. Kienlin. Bonn: Rudolf Habelt, 83–119.
- Perea, A. 1991. Orfebrería Prerromana. Arqueología del Oro [Pre-Roman goldsmithing. Archaeology of gold]. Madrid: Caja de Madrid, Comunidad de Madrid.
- Perea, A., 2012. El género de los objetos. Variaciones sobre orfebrería argárica [The gender of objects. Variations on Argaric goldsmithing], in *La Arqueología funeraria* desde una perspectiva de género [Funerary archaeology from a gender perspective], ed. L. Prados Torreira. Madrid: UAM ediciones, 79–97.
- Pernicka, E., 2014. Possibilities and limitations of provenance studies of ancient silver and gold, in *Metalle der Macht Frühes Gold und Silber/Metals of power Early gold and silver*, eds H. Meller, R. Risch & E. Pernicka. (Tagungen des Landesmuseums für Vorgeschichte Halle Band 11/I.) Halle: Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt/Landesmuseum für Vorgeschichte Halle, 153–64.
- Pingel, V. 1992a. Die Goldfunde der Argar-Kultur. *Madrider Mitteilungen* 33, 6–24.
- Pingel, V. 1992b. *Die vorgeschichtlichen Goldfunde der Iberischen Halbinsel: eine archäologische Untersuchung zur Auswertung der Spektralanalysen* [The prehistoric gold finds of the Iberian peninsula: an archaeological research on the evaluation of spectral analyses]. (Madrider Forschungen 17.) Berlin/New York: De Gruyter.

- Schubart, H., 1976. Relaciones mediterráneas de la cultura de El Argar [Mediterranean relations of the El Argar culture]. *Zephyrus* 26–27, 331–42.
- Schubart, H. 2004. Das reiche Grab einer jungen Frau aus dem El Argar-zeitlichen Fuente Álamo [The rich grave of a young woman from the El Argar-period of Fuente Álamo]. *Madrider Mitteilungen* 45, 57–79.
- Schubart, H. & C. Liesau Von Lettow-Vorbeck, 2018. Röttel im El Argar-zeitlichen Bestattungsritual von Fuente Álamo [Haematite in the El Argar period burial ritual of Fuente Álamo]. *Madrider Mitteilungen* 59, 161–81.
- Schuhmacher, T.X. & H. Schubart, 2003. Fuente Alamo: Die Siedlungskeramik der Grabungen 1985-1991. Untersuchungen zur Chronologie und zum Siedlungsschema der El Argar-Kultur: stratigraphisch geordnete Keramik der El Argar-Zeit aus den Grabungen 1977–1982 [Fuente Alamo: The settlement pottery of the 1985-1991 excavations. Studies on the chronology and settlement layout of the El Argar culture: stratigraphically ordered pottery of the El Argar period from the 1977-1982 excavations]. (Iberia Archeologica Band 4.) Mainz am Rhein: Philipp von Zabern.
- Schumacher-Matthäus, G., 1985. Studien zu bronzezeitlichen Schmucktrachten im Karpatenbecken: Ein Beitrag zur Deutung der Hortfunde im Karpatenbecken. (Marburger Studien zur Vor- und Frühgeschichte 4.) Mainz am Rhein: Philipp Von Zabern.
- Simón García, J.L. 1998. *La metalurgia prehistórica valenciana*. (SIP Serie de Trabajos Varios 93.) Valencia: Diputación de Valencia.
- Siret, H. 1905. Note sur la communication du R.P. Furgús relative á des tombes préhistoriques à Orihuela [Note on the report by Father Furgús on the prehistoric tombs in Orihuela]. *Annales de la Société d'Archéologie de Bruxelles* 19(3 &4): 371–80.
- Siret, H. & L. Siret, 1890. Las primeras edades del metal en el sudeste de España [The first metal ages in southeast Spain]. Barcelona: Tipografía de Heinrich y Cía.
- Szabó, G.V., 1997. A Perjámos-kultúra leletei Hódmezövásárhely környékén (Adalékok a kora és középső bronzkori női viselethez) [Findings of Perjamos culture in Hódmezővásárhely region (contribution to female costumes in the early and middle Bronze Age)], in *Látták Trója kapuit: Bronzkori leletek a Közép-Tisza vidékéről* ed. P. Havassy. (Gyulai Katalógusok 3.) Gyula: Erkel Ferenc Múzeum, 57–84.
- Szabó, G.V., 2019. Bronze Age Treasures in Hungary. The quest for buried weapons, tools and jewellery.

- (Hereditas Archaeologica Hungariae 3.) Budapest: Archaeolingua.
- Villalba-Mouco, V., C. Oliart, C. Rihuete-Herrada, et al., 2021. Genomic transformation and social organization during the Copper Age–Bronze Age transition in southern Iberia. Science Advances 7, eabi7038.
- Villalba-Mouco, V., C. Oliart, C. Rihuete-Herrada, et al., 2022. Kinship practices in the early state El Argar society from Bronze Age Iberia. Scientific Reports 12, 22415.
- Wels-Weyrauch, U., 1989. Mittelbronzezeitliche Frauentrachten in Süddeutschland (Beziehungen zur Hagenauer Gruppierung) [Middle Bronze Age women's costumes in southern Germany (relations with the Hagenau group)], in *Actes du 113<sup>e</sup> Congrès National des Sociétés Savantes, Strasbourg, 1988*. Paris: Comité des Travaux historiques et scientifiques, 117–34.

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