

Conflicting evidence? Weapons and skeletons in the Bronze Age of south-east Iberia

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With its forts, swords, halberds and daggers the Argaric people of south-east Spain has long been seen as a warrior society. The authors dismantle this model, showing that defences around settlements and weapons and knives in tombs have quite different social roles. An analysis of skeletons showed that while these Bronze Age people might have been periodically clubbing each other on the head, they were not doing a lot of lethal stabbing.

Keywords: Iberia, Bronze Age, warfare, violence, halberds, swords

Introduction

According to an important body of social theory, the emergence and institutionalisation of violence and warfare are inherent to processes of increasing social complexity. Prehistoric Europe – and most specifically its Bronze Age – has provided a suitable scenario to fuel this belief. The warrior as a new social character appears during this period, progressively expanding across the different landscapes of the European continent.

The Argaric societies in south-east Iberia (corresponding to the Bronze Age in south-eastern Spain and spanning from *c.* 2250 to 1450 cal BC) have traditionally been interpreted as conforming to this general principle. Specialised weaponry such as halberds and swords have been correlated with evidence of the existence of warriors and – more or less implicitly – warfare. But, in common with similar examples throughout Europe, the emergence of warriors and warfare has been *pronounced* rather than explained.

Despite the leading role accorded to the warrior as a new figure, it seems to us that the necessary connections between the rise of warriors and their social practice and context have remained largely unexplored. In recent years, several archaeological works have concentrated on this remarkable phenomenon (Carman 1997; Martin & Frayer 1997; Carman & Harding 1999; Parker & Thorpe 2005; Arkush & Allen 2006) putting forward different causes for

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it, such as the need to pacify the past (Keeley 1996; Vankilde 2003; Guilaine & Zammit 2005).

We are also convinced that assertions about the rise of warriors are related to the dominant discourse employed to explain past social dynamics, centered on the construction of grand narratives and abstract social categories and tendencies. In the particular case of warriors and warfare, the emphasis on macro-scale explanations has ironed out fundamental aspects of specific social interactions. That is also why, in the literature on Argaric societies, concepts such as *warriors*, *conflict*, *instability*, *warfare* and *militarism* are widely used but poorly theorised.

In this essay, the main lines of archaeological evidence that allegedly illustrate warfare in the Argaric culture will be re-assessed. Up to now, the emergence of specialised weaponry has been deemed conclusive proof of the rise of a new, warlike elite comprised of male warriors. The other main source of empirical support for the prevailing views is supplied by the characteristics of Argaric settlements themselves, in relation to their location and some of their structures, interpreted as defensive (Siret & Siret 1890; Cuadrado 1950; Schubart 1973; Gilman 1976; Molina 1983; Castro *et al.* 1993-94; Contreras *et al.* 1995). While retaining the validity of such lines of evidence, we will show how signs of intentional trauma in human remains can shed new light on the debate. Building from these various sources, we will offer an interpretation that reconciles seemingly conflicting evidence. As applied to the Argaric culture, we will suggest that the campaign linking specialised weaponry with the occurrence of generalised war and institutionalised bodies of warriors deserves an armistice.

Argaric material culture: settlements and defence

Argaric culture is defined by a combination of elements including a specific settlement pattern, the presence of certain kinds of metal tools and ceramic vessels, and a distinctive burial rite. As a general rule, Argaric sites tended to be strategically located in mountains and hills with natural defensive features and a commanding view of the surrounding area. In addition, some of these sites were also fortified by the construction of diverse and complex defence structures such as stone walls, towers, bastions, forts and stone enclosures protecting the higher areas of the settlements, as well as those with easier access. In cases such as Cerro de la Encina (Granada), these enclosures achieved a significant level of monumentality, requiring a considerable effort in their construction and maintenance (Aranda & Molina 2006) (Figure 1).

However, the presence of defensive systems is not a new feature of Argaric societies since they are well known in the previous Chalcolithic period (Aranda & Sánchez 2005). In fact, the main difference consists of the clear re-orientation in the location of many sites, which has traditionally been accounted for in terms of territorial control, defence and a generalised presence of violence in Argaric communities. But this traditional view has been enriched by recent surveys and excavations repeatedly confirming the idea that not all sites shared the same characteristics. Their differences in size, location and material culture have all been mobilised as evidence suggesting that there was a hierarchical and territorially structured settlement pattern, whereby different sites had specialised strategic, social and/or economic functions and interdependent relationships. In fact, it is now possible to distinguish four



Figure 1. Stone enclosure from the Argaric site of Cerro de la Encina.

main types of settlements: a) large, centrally located sites. Strategically placed, normally on mountains and hills, they comprise natural and/or artificial defence structures, and exhibit a significant accumulation of wealth in the form of extraordinary funerary furnishings. Socially, politically and/or economically connected with these central sites, we can also find: b) minor sites, also on hilltops, with specialised economic activities such as metal production or cereal processing and storage (Contreras 2000; Risch 2002); c) small sites located in low lying areas of no strategic, defensive concern. Particularly linked with optimal land resources, especially for wet farming, they would support a specialisation in farming activities (Ayala 1991; Castro *et al.* 2001); d) forts explained in connection with specific settlements and the need to control boundaries or the access to particular territories (Molina 1983; Ayala 1991).

Although the picture is more nuanced now, the Argaric settlement pattern still seems to reveal a concern for territorial control and defence. Labour invested not only in the construction but also in the maintenance of complex defensive systems seems to indicate that at least some form of defence was perceived to be necessary. However, it is also true that while the selection of sites with natural defence is a widespread feature, defensive constructions are limited to a few settlements (Molina & Cámara 2004).

Burials, weapons and warriors

Within settlements, burials were usually located below the floors of houses, in four main types of containers: ceramic urns, cists, pit-graves and *covachas* (small artificial caves cut into the rock). Some of these tombs contain funerary offerings belonging to four main groups: pottery vessels; metal weapons such as swords and halberds; tools (axes, daggers/knives,

awls); and ornaments such as rings, bracelets, earrings, diadems (made from copper, silver or gold) and necklaces (usually made of stone beads). Tombs range from burials containing no grave goods at all, to burials with a rich panoply of mortuary objects. Such obvious variations in funerary furnishings have been interpreted as clear proof of the existence of social differences at the heart of Argaric communities. In fact, most scholars accept the image of a deeply stratified society, with evidence of ascribed status in the form of wealthy child burials (Lull 1983; Molina 1983; Contreras *et al.* 1995; Sánchez-Romero 2004).

Paramount to our discussion is the emergence, for the first time in the Iberian Peninsula, of specialised weaponry in the form of halberds and swords (Figure 2). Together with other metallic items, halberds and swords have been the focus of Argaric research and have played a fundamental role in defining and characterising Argaric culture (Cuadrado 1950; Schubart 1973; Brandherm 2003). Without exception, all well-provenanced halberds and swords have been recovered from tombs, where they were deposited as grave-goods. Interestingly, since the beginnings of Argaric research (Siret & Siret 1890), these weapons have been noted only in adult male burials. In the case of halberds we know, in addition, that they belonged to men who were older than 35 and, in many cases, older than 50 (Castro *et al.* 1993-94). Consequently, gender and age discriminations would determine access to halberds and most probably swords (unfortunately, at present, the age of men buried with swords is unknown). Recent research based on radiocarbon dating seems to indicate that the weapons were not contemporary and that halberds were superseded by swords around 1800 cal BC (Castro *et al.* 1993-4).

Halberds and swords appear frequently in those burials showing the most important accumulation of wealth and symbolic items (Figure 3). Both types of object have been regarded as possessing the highest social value among funerary objects (Lull & Estevez 1986). Only a handful of Argaric adult males were buried with them. For instance in the Argar necropolis only 15 halberds and 4 swords were documented from a total of 1035 graves. In fact, the number of halberds recovered for the entire Argaric period must be estimated around 50. Even more striking is the case of swords: around 13 according to the latest studies (Brandherm 2003). Consequently, social position would also be a discriminating factor determining the possession of specialised weaponry. Furthermore, the few available studies on archaeometallurgy tend to question the actual suitability of such objects for combat (Hernández 1990; Carrión *et al.* 2002).

This highly restricted access to specialised weapons stands in contrast to the more widespread occurrence of other metallic items. According to Montero (1993, 1994), weapons represent only 1.7 per cent of metal products (Table 1) and less than 10 per cent weight of the total estimated metalwork for the whole Argaric period, which would have been mainly targeted at the manufacture of tools and ornaments. It can therefore be argued that specialised weaponry had a rather low impact on Argaric metal production. This low significance is even more startling when Argaric temporal and geographical factors are taken into account. The Argaric culture spans a period of nearly eight centuries from 2250 to 1450 cal BC and covers an area of approximately 45 000km², similar in size to such present-day European countries as Denmark, Holland or Estonia.

One reason that the importance of specialised weaponry has traditionally been overestimated is because axes and daggers/knives were also classed as weapons and ascribed



Figure 2. Argaric halberds (after Schubart 1973).

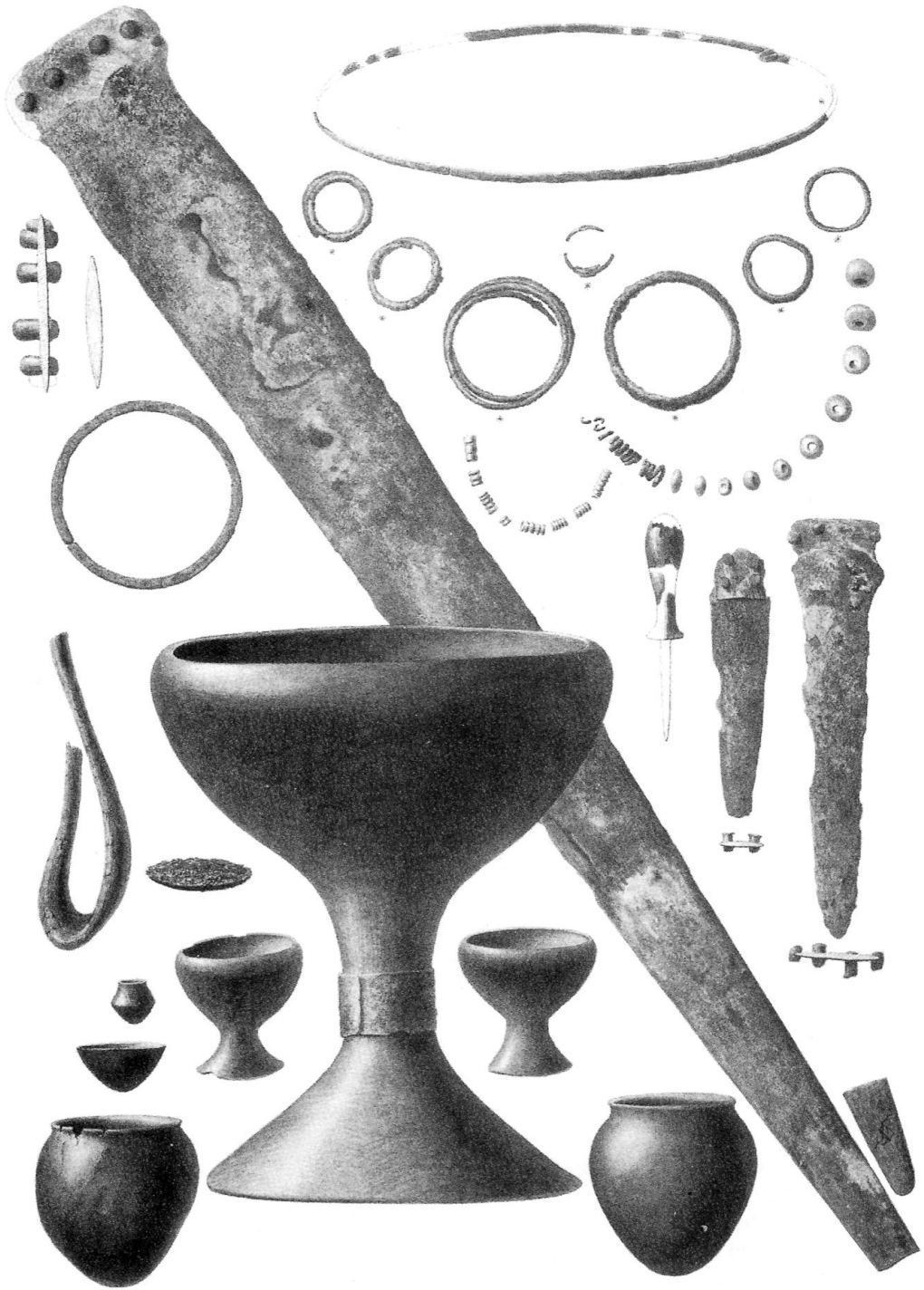


Figure 3. Grave goods from Tomb 9 in Fuente Álamo (after Siret & Siret 1890).

Table 1. Frequencies of metallic objects for the Copper Age and the Argaric culture (after Montero 1994).

Types of objects	Copper Age	%	Argaric culture	%
Tools	355	60.48	449	15.74
Tools-weapons	155	26.40	793	27.45
Weapons	0	0	50	1.73
Ornaments	48	8.18	1540	53.32
Accessories	4	0.68	32	1.11
Non-classified	5	4.26	24	0.83
	565	100	2888	100

to the male warrior elite by the majority of scholars (Cuadrado 1950; Castro *et al.* 1993-94; Contreras *et al.* 2000; Risch 2002; Chapman 2003). Axes and daggers/knives comprise a much higher percentage of metal production: 30 per cent of metal objects and 83 per cent of the total metalwork weight (Montero 1993, 1994). But unlike halberds and swords, axes and daggers/knives may serve multifunctional purposes and be employed in everyday production activities. Like most metal objects, they have been found mainly in tombs; but while axes are exclusive to male burials, daggers/knives can be associated with either gender.

In this context, there emerges a fundamental contradiction regarding the male-exclusive ascription of weapons. As has been recently pointed out, if daggers/knives were weapons, then the allegedly exclusive relationship between men and weapons has to be ruled out, given that daggers/knives are also found in female tombs (Sanahuja 2007). To avoid this contradiction, the military character of these items has only been emphasised when associated with male tombs. When found in female tombs, the very same objects have been interpreted as working tools (Castro *et al.* 2001), or as indices of the women's family group's social status (Contreras *et al.* 1995). Needless to say, such interpretive ruses only highlight the archaeologists' gender bias.

Although the multifunctional properties of axes and daggers/knives require further analysis, we are more inclined to regard such items as working tools. In his recent and comprehensive research, Brandherm (2003) has observed that daggers/knives or 'blades' (as he prefers to name them, since there is no morphological distinction between them) show traces of repair aimed at maintaining their functional properties. Many blades were continuously re-sharpened, which reduced, in some cases dramatically, their original shape and size. The hafting-plates also show traces of different repairing marks, including the renewal of hilts. All the evidence emphasises the tool-like nature of daggers/knives and their use mainly in production activities.

Considering all the above, it is hard to imagine a context of generalised interpersonal violence where the few swords and halberds would have played a decisive role. Another important fact in the framework of the present discussion is the absence of any other distinctive elements – besides weapons themselves – identifying the men in the tombs as warriors. It must be clear that we are not dealing here with anything resembling the well-known warrior tombs with standardised warrior assemblages that characterise later European developments (Kristiansen 1999; Harrison 2004; Harding 2007).

Table 2. Frequency of cranial injuries by sex and age. Number of individuals/injured people/frequency in %.

Age category	Males	Females	Unidentified	Total
Infantile I (0-6)	–	–	29/0/0	29/0/0
Infantile II (7-13)	–	–	15/0/0	15/0/0
Juvenile (13-20)	1/1/100	–	11/0/0	12/1/8.3
Adults (21-40)	31/4/12.9	32/2/6.2	2/0/0	65/6/9
Mature (41-60)	13/3/23.1	17/0/0	–	30/3/10
Senile (60+)	3/2/66.6	1/0/0	–	4/2/50
	48/10/20.8	50/2/4	57/0/0	155/12/7.7

Skeletal bodies

Evidence for wounding found in archaeological skeletons may reflect purposeful aggression inflicted upon human bodies. It is true that episodes of violence in the past may have outnumbered those we know of from the picture conveyed by human bones. For example lethal wounds do not always impact bones, we often lack complete and well-preserved archaeological bodies, and people who died in violent encounters may not have found a place of burial in their home villages (Milner 1999; Vencl 1999; Osgood *et al.* 2000; Walker 2001; Vankilde 2003). Even so, osteological lesions provide precious data on violent social behaviour in prehistoric societies.

Although the earliest archaeological research on the Argaric culture is coeval with the beginnings of palaeoanthropological studies at the end of the nineteenth century, its skeletons have never been systematically examined for marks of violence. More recently, analyses at the University of Granada's Laboratory of Physical Anthropology have addressed this question (Botella *et al.* 1995; Jiménez-Brobeil *et al.* 1995). The results allow us to evaluate signs of physical violence and, most importantly, their anatomical pattern, as well as their occurrence according to age and gender.

In what follows, we will summarise the information obtained from a sample of 155 skeletons from six different Argaric sites, all of them in the Granada area. Table 2 shows their distribution according to age and sex. Considering only lesions with a clear traumatic origin, 16.7 per cent of the whole sample presents some kind of trauma, and there is a slight difference between cranial (7.7 per cent) and post-cranial (11.6 per cent) lesions.

Twelve people, ten males and two females, had suffered cranial injuries (more than one, in some cases). Significantly, all of them were adults, mature or senile. Except for three cases, the lesions consisted of impressions or depressed fractures in the outer deck of the cranial vault (Figure 4). All of them were *ante mortem* cranial injuries resulting from direct impacts, and show clear signs of healing. In terms of sexual differences, male skeletons exhibit a much higher occurrence of injuries as compared with female ones (20.8 per cent *versus* 4 per cent). Chi-squared analysis of this sexual distinction provides a high statistical significance ($P = 0.02$).

Furthermore, the shape of the cranial lesions also shows a high degree of standardisation (Table 3). 79 per cent of the injuries are circular or oval-shaped, measuring around 20mm. Depending on the impact, the depressed fractures can be more or less severe (ranging from

Table 3. Cranial injuries by sex, shape and side.

Shape	Circular	Oval	Others	Total
Male	6	4	4	14
Female	2	3	0	5
Total (%)	42.1%	36.8%	21%	

Side	Right	Left	Medium	Total
Male	8	4	2	14
Female	3	2	0	5
Total (%)	57.9%	31.6%	10.5%	



Figure 4. Cranial traumatism from the Argaric site of Castellón Alto.

0.5 to 4mm). They are most commonly located in the frontal (57.9 per cent) and the parietal areas (21 per cent) (Table 4); and there is a higher incidence on the right (57.9 per cent) *versus* the left side (31.6 per cent). Again, all these differences are highly significant from a statistical point of view. P values in males were $P = 0.05$ for the location of trauma (in the frontal area *versus* the parietal area), and $P = 0.001$ for the lateral distribution (on the right side *versus* the left side), which means that there is probably a non-random explanation for the higher rate of injuries on the right side of the cranial vault's frontal area. Their significant prevalence in males, along with their shape and their anatomical location, reveals a pattern that renders the suspicion of deliberate aggressions highly plausible.

Table 4. Cranial injuries by sex and position.

Position	Front	Pariet.	Front/Pariet.	Tempor.	Malar	Nasal
Male	9	2	0	1	1	1
Female	2	2	1	0	0	0
Total (%)	57.9%	21%	5.3%	5.3%	5.3%	5.3%

As for post-cranial lesions, they usually correspond to fractures. Although distinctions between accidental falls and deliberate aggression are difficult to establish, lesions of this type, unlike the above described cranial injuries, do not follow a clear anatomical and morphological pattern, nor do they show a significant variation between male (20.8 per cent) and female individuals (14 per cent).

Taking into account all the above evidence, it seems clear that, at present, the only signs of possible intentional lesions are derived from cranial trauma. However, we must emphasise the fact that no evidence of blade injuries has been found in the analysed sample, or even mentioned in other palaeoanthropological reports (Buikstra *et al.* 1999; Contreras *et al.* 2000; Kunter 2000; López-Padilla *et al.* 2006). Whatever role swords and halberds (even axes and daggers/knives) may have played in actual combat engagements, their imprints on bones are non-existent. Furthermore, evidence of violence-related mortality is also absent in the archaeological record, since no bodies with lethal injuries have ever been found.

In view of all the above, information on the burial context of bodies with cranial trauma would have been very useful. Unfortunately, however, most data on these grave goods remain at present unpublished. Much could also be learned if anthropological evidence were re-analysed, and we could establish whether males buried with specialised weaponry were also affected by cranial lesions, and whether that particular form of trauma can be seen in other Argaric areas.

Discussion

Bringing together all of the facts mentioned above, we must now discuss if the supposedly structural character of warfare in Argaric societies, and its link to specialised weaponry, may remain unquestioned. According to the data hitherto reviewed, it seems undeniable that violence, in one form or another, was indeed present during the Argaric period. Its specific shape, however, seems not so clear and, in principle, even contradictory. Although we have fortification systems and specialised weaponry, halberds and swords appear in very low quantities; and while evidence of trauma in skeletons may indicate that lesions were caused intentionally, that same evidence cannot be related to the sharp weapons under discussion.

In fact, as the term 'conflicting' in the title of this paper suggests, archaeological data seem to be *contradictory*. Evidence *qua* evidence, however, cannot possess such a quality; it is only by virtue of our interpretive procedures that facts appear to be mutually inconsistent. We often insist on elaborating unitary explanations on the basis of evidence that may have arisen from different social activities. That is probably the case in this instance, and the apparent contradictions in the available evidence may originate from the fact that interpersonal violence was waged at different scales.

The effort invested in the construction and long-term maintenance of massive fortification systems has been interpreted by some authors as obvious proof of warfare and actual attacks (Solometo 2006, following Otterbein 1970). As indicated also by Milner (1999: 198), building and repairing walls takes time away from other pressing survival-related tasks and, in the absence of a regular threat, the need for fortifications is difficult to understand (Solometo 2006: 30-1). In fact, it has also been observed that perceived threats and readiness to fight and defend are more widespread than actual combats and that, sometimes, '*defences outpace offensive capabilities*' (Arkush & Allen 2006: 7). That could be the reason why, in general, archaeological indicators for mobilisation outnumber evidence of actual destruction (Ferguson 1984; Haas 1990; Solometo 2006). In the case of Argaric communities, the evidence for defence is also more abundant than that for offence.

Earlier, in the section on weapons and warriors, we saw that the only possible signs of intentional violence in skeletal bodies consist in *intra-vitam* cranial trauma. If this was the case, the type and shape of the lesions, and the lack of *peri-mortem* cranial fractures, are consistent with hand-to-hand fighting episodes, and suggest that the injuries may have been caused by a variety of different blunt implements. Ethnographic and archaeological parallels also indicate that practices of this sort, hitherto unsuspected for the Argaric world, usually take place in a context of ritualised or highly regulated resolution of violent conflicts, with few or no fatalities (Walker 1989, 2001; Turney-High 1991; Robb 1997; Wilkinson 1997; Schulting & Wysocki 2002; Guilaine & Zammit 2005; Arkush & Allen 2006; Solometo 2006). Although we are still far from fully understanding its specific social meaning in the Argaric world, it is highly likely that combat was not aimed at eliminating opponents, and almost surely age and gender were significant dimensions, since no children show signs of violence and there is a greater incidence on men than on women. If this type of violence was regulated, with preordained rules on *when, where, how* and *by whom* it should be enacted, then obviously it was not directly connected with the construction of Argaric defences.

Cranial traumatism could not be directly linked to the presence of halberds and swords, either. Not only were they not the weapons implied but, people engaged in the above mentioned combat practices did not usually have such weapons among their grave-goods. Besides, although these practices were male-dominated, the presence of the same traumatism in two female crania reveals that, unlike specialised weaponry, they were not exclusively associated with males. In view of the above, it is difficult to establish a link between this category of interpersonal violence and the – allegedly widespread – Argaric practice of warfare. Although both practices are not incompatible, they entail different forms of conflict resolution.

Finally, we need to remember the rather low number of specialised weapons that has been recovered, and the blatant absence of sharp injuries in Argaric skeletons. These data support the need to reassess the meaning given to swords and halberds, and question the assumption that specialised weaponry emerged along with an organised body of warriors and widespread warfare. We are aware that soft-tissue injuries may not be detectable in skeletal remains and may thus become under-represented. According to recent calculations, a person's skeleton amounts to about 60 per cent of a body's target area in a frontal view. This means that the chance of hitting bones with a random weapon shot is 50 per cent (Walker 2001). But even allowing for this under-representation, the fact is that the examination of bodies recovered in the Argaric territory found *no* signs of blade injuries at all. Such lack of evidence stands

in contrast with the allegedly extensive use of swords, halberds, axes and daggers/knives as actual weapons by Argaric people. Whether there were warriors and wars, we must conclude these weapons did not play any critical role.

Conclusion

How then is the presence of halberds and swords in Argaric funerary assemblages to be explained? It seems to us that their very context of deposition may point to the possible answers. We know the weapons were selected to be deposited only in the tombs of a rather limited number of males (ranging from adult to mature), who occupied a central place in the community's social structure. Most probably, the artefacts were related to the Argaric gender and power ideology, and served as emblems of high-ranked maleness (for similar discussions see for instance Sarauw 2007). At least during the burial rite, these weapons could have been used as individualising attributes, to differentiate and set specific men apart from the rest of the group. At the same time, the display of weapons in special social events (feasting, commensal practices, funerary rituals, etc.) could have served as a warning, functioning as an intimidating mechanism that contributed to the reinforcement or construction of political power. They were a reminder of the capacity of the dominant class to use violence if necessary. Although in our view the social leaders would not be in command of a class of institutionalised warriors in a context of widespread warfare, they would nevertheless have the capacity to mobilise people and use physical force under certain circumstances.

As in many other cases in European prehistory, the Argaric archaeological record does not at present provide us with enough information to thoroughly visualise the different forms adopted by violence. The prevailing assumptions on the existence of warriors and warfare have not favoured a penetrating scholarly debate, nor the in-depth search for supporting archaeological evidence. In the light of the available evidence, it seems clear that a single interpretation cannot account for the conditions and circumstances under which warlike practices occurred. Different archaeological evidence – defences, cranial traumata and specialised weaponry – point to different categories of violence and, therefore, to different scales, social costs, forms of combat, levels of inter- or intra-group conflict, social causes, and social consequences.

In fact, the aim of this paper was not to force all the disparate evidence on violence into a single, harmonised interpretation, but to critically re-evaluate the supposedly structural character of warfare and warriors in the Argaric world. Although there is still much room for debate, our research has shown how dubious traditional assumptions on this matter are. Violence did happen, although in a very different form than that imagined by traditional research.

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