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## Preparing the Landscape for Conflict. Some Examples of ‘Castling’ during the Final Bronze Age in Southwestern Europe. Between Practical and Symbolic Use of Hilltop Walled Settlements

### Some remarks on the psychophysiology of violence

Psychophysiology studies the physiological bases of psychological correlates of behavior.<sup>1</sup> In the application of psychophysiology to combat, the concepts of impulsive aggression and instrumental aggression are distinguished: first, a behavior is manifested as a state of anger that arises rapidly in response to a given stimulus; second, organized behavior appears that does not emerge from random dysfunction.<sup>2</sup> An example of instrumental aggression by a human being against a non-human being may be the practice in pastoral societies of accustoming their members to kill an animal without feeling remorse.<sup>3</sup> But the reluctance to kill a member of one's own species is too strong: so it is not accustomed to human nature that the physical aggression by another human being is considered to be the ‘Universal Human Phobia’ (UHF).<sup>4</sup> A phobia is an irrational, uncontrollable fear that significantly modifies the human behavior. In this case the Sympathetic Nervous System (SNS) is activated and mobilizes and orientates energies in the human body towards the action. During combat, all of the participants suffer a stress that results in the activation of SNS; after the combat, when the situation of danger has ceased, it is necessary to regain the consumed energy reserves very quickly by SNS. Thus, the Parasympathic Nervous System (PNS) is activated, causing a “general black out” in the body: that is, a parasympathic blackout: this particular moment is one of the biggest moments of vulnerability.<sup>5</sup>

Consequent to the activation of the SNS during a fight, David Grossman identifies five phases of a state that depend both on the psychological attitude and on the physiology linked to the activation of the SNS,<sup>6</sup> denoted in the following order: white, yellow, red, grey and black. Those persons who are already accustomed to suffering the phobia of physical aggression by other human beings (warriors) start from a “yellow” (psychological) condition, which allows them to endure a “red” condition (between 115 and 145 heartbeats per minute), whereby they maintain the ability of complex motor skills. Those persons who are not accustomed to being attacked by their own kind, or to kill them, start from the “white” psychological condition; they do not stand up to the “red” condition and immediately go into the “grey” and “black” phase (from 145 to 175–200 heartbeats per minute). They lose the optimal conditions of complex motor skills and the visual and cognitive condition reached in the red phase. So these persons undergo the physiological (collapse of the nervous system) and psychological consequences (use of instinct and not of reason) of a phobia, which induce either physical immobilization or precipitated escape, and become prey to all effects.

Another psychological element of combat is the “Bigger Bang” factor: whoever makes more clamor than the other person, can scare him and make him desist from attacking, or even make him flee. This is given, in practice, by three examples: making clamor in battle, showing oneself as more numerous than the enemy, and occupying a position that is apparently unassailable or attacking but with certain heavy losses. Another psychological element in hand-to-hand combat is the “group factor”, which gives mutual support and sharing of responsibility.<sup>7</sup> Finally, there is the theory of the “death field”, which

<sup>1</sup> Stern 1964.

<sup>2</sup> Pinker 2002.

<sup>3</sup> Keegan 1994.

<sup>4</sup> Grossman 2010, 27.

<sup>5</sup> Grossman 2010, 40–41.

<sup>6</sup> Grossman 2010, 53–54.

<sup>7</sup> Grossman 2010, 200. 203–204.

states that those in desperate conditions, with their backs to the wall, fight more vigorously because they are desperate.<sup>8</sup>

Why is it considered useful to apply these theories, experimentally verified on subjects of contemporary times? Firstly, because the modern human mind is the result of an uninterrupted evolution of the cognitive capacity of the genus *Sapiens*,<sup>9</sup> it is believed that despite the various adaptations and developments that have occurred over the millennia, a certain tendency towards a basic behavior has evolved. And this tendency manifests itself, *inter alia*, in events, such as in phobias, which awaken the irrational part of the brain, which is the least influenced by current culture. Why apply the psychology of combat to Late Prehistoric and Protohistoric hillforts? A similar approach has already been proposed in order to explain why it was necessary to create protection for villages, already as early as the Neolithic period.<sup>10</sup> Now in this contribution combat psychology will be applied in an attempt to explain the symbolic-practical role of some hillforts.

### Some remarks on conflict in Bronze Age societies

In general, the question of the existence of conflicts that are similar to war, even in traditional societies, started basically with the book by L.H. Keeley.<sup>11</sup> Ever since more attention has been paid to research and reflection on prehistoric warfare.<sup>12</sup> For the Bronze Age the actual main categories in the data to be considered and used by researchers are weapons, fortifications, skeletal analyses and art,<sup>13</sup> to which social organization are added.<sup>14</sup> Much literature has been produced in different fields concerning the materials and contexts, from the analysis of production and use of weapons,<sup>15</sup> through the figure of the warrior and to the symbolic and social value of warfare.<sup>16</sup> However, most of the works dedicated to warfare in the Bronze Age are still on

armament, symbolism in art and the social role in burials; only few works are exclusively dedicated to the role of settlements and fortifications.<sup>17</sup>

Although recent work has highlighted the need for multidisciplinary research on war in prehistoric times,<sup>18</sup> currently the social sciences, such as psychology and sociology, are hardly involved.<sup>19</sup> Having a solid basis in pure human behavior and detached from eras and contexts, social sciences can be applied to prehistoric contexts and eras, and with that social sciences offer completeness to archaeological research. In particular, the Bronze Age is an interesting field for the application of these two social sciences: it represents the global emergence of militarized society<sup>20</sup> and is a period in which the definition of warfare becomes more and more relevant to the manifestations of violence between groups. The good and pure application to a problem within prehistoric warfare of a social science such as ethnography, for example, has led to the demise of the view of fortifications as a universal necessity of hierarchical societies.<sup>21</sup> Or the old axiom of the existence of a link between a more complex social structure and an increase in war with the consequent existence of all its material manifestations including fortifications can be corrected not in an evolutionary sense, but contingent to each period and in each region.<sup>22</sup> Regarding this aspect the Final Bronze Age in the “Barbaric Europe”<sup>23</sup> has been defined as a period of the “explosion” of the fortified settlements.<sup>24</sup> Whether or not this was due to proposals that part of Europe was directly affected by the phenomenon of the Urnfields, which were interpreted at the time as an invasion,<sup>25</sup> in light of the data that emerge from the chronology of the fortified dwellings, it is undeniable that this “explosion” of fortifications took place between the 13<sup>th</sup> and 9<sup>th</sup> centuries BC not only in the central western Europe.<sup>26</sup>

<sup>8</sup> Greene 2006, 75–92.

<sup>9</sup> Pievani 2018, 108–109.

<sup>10</sup> Delfino 2016a.

<sup>11</sup> Keeley 1996.

<sup>12</sup> Guilaine/Zammit 1998.

<sup>13</sup> Thorpe 2013, 234.

<sup>14</sup> Harding 2007.

<sup>15</sup> Uckelmann/Mödlinger 2011.

<sup>16</sup> Horn/Kristiansen 2018.

<sup>17</sup> Hansen/Krause 2018.

<sup>18</sup> Delfino *et al.* 2018, 5.

<sup>19</sup> Delfino 2018, 4.

<sup>20</sup> Horn/Kristiansen 2018, 1.

<sup>21</sup> Reymann 2018.

<sup>22</sup> Delfino 2018, 4.

<sup>23</sup> To use a definition by Briard 1976.

<sup>24</sup> Brun/Mordant 1988.

<sup>25</sup> The mass migration theory has been progressively attenuated to a more recent model proposed in Brun 2013, 14

<sup>26</sup> Delfino *et al.* in press

Absolute chronology	Northern Italy	Southern France	Catalunya	Levante	Portugal
1900–1170 BC					Bronze Pleno do Sudoeste
1300–1200 BC	Bronzo Recente	Bronze Finale I	Bronze Final	Bronze Final I	
1200–800 BC	Bronzo Finale	Bronze Finale II	Bronze Final	Bronze Final I–II	
850–725 BC				Bronze Final III	
1170–730 BC		Bronze Finale III			Bronze Final do Sudoeste

**Tab. 1** Comparative relative chronology on the Final Bronze Age. For greater ease in reading and comparison, the dates indicated are rounded, as compared to pure radiocarbon indications

### A general view from northern Italy until central Portugal in the Final Bronze Age

In the different regions of the study, different relative chronology terminologies are used, but they are all included in the European Final Bronze Age (**Tab. 1**).<sup>27</sup>

The Mediterranean northwestern Italy is represented by the Liguria, where for the *Età del Bronzo Recente* there is a proliferation of walled hilltop sites: some only terraced, others definitely fortified. The phenomenon has “slight roots” in the end of the Middle Bronze Age and continues, albeit with less intensity, in the *Età del Bronzo Finale*.<sup>28</sup>

In the southern France, although for some territories the studies are not too advanced, and consequently there are no territorial data, there the situation is quite outlined. In the Pèrigord, the Quercy, the Lot, the Auvergne and the Grande Causse there are a dozen walled settlements on hilltops, established in the *Bronze Final IIIb* (Ha B3). In the Provence in the Final Bronze Age the hilltop settlements amount to 28%; the lowland settlements are 38% and habitation in caves are 38%. In the Languedoc majority of settlements are established on hilltops in the *Bronze Finale IIIa*; in the *Bronze Finale IIIb* 80% of the settlements are installed in defended sites. In general, there is a chronological hiatus between the manifestations of settlements in Neolithic/Chalcolithic/Early Bronze ages and those of the Final Bronze Age.

It is in this last period that small agglomerations appear, between 2 and 3 ha in area.<sup>29</sup> Varied defensive systems, however, not only simple walls on high ground, alternate between *Bronze Finale II* and *Bronze Final IIIb*: alternating between rampart, palisades and ditches.<sup>30</sup>

In the Mediterranean part of Spain, the north-eastern (Catalunya) is characterized by a chronological hiatus from the *Bronze Inicial* and the Urnfield period (Final Bronze Age, from 11<sup>th</sup> century BC) with a common strategy between the two periods: the installment of fortified settlements on heights at the confluence of streams or creeks. Located there are open single-family dwellings, open multi-family dwellings and inhabited areas on high ground with a central space.<sup>31</sup> Many walled settlements with a central space and perched on high ground as a control of mining areas were established exclusively in the Final Bronze Age, indicating in the internal structure a kind of initial urbanism.<sup>32</sup> In the Levante (Valencia) between the Middle Bronze and the Final Bronze Age there is no dichotomy in terms of hilltop settlements: five hilltop settlements in the Middle Bronze Age (16<sup>th</sup>–14<sup>th</sup> centuries BC) and seven in the Final Bronze Age (11<sup>th</sup>–8<sup>th</sup> centuries BC), of which one, Pic del Corbs, is in continuation of occupation from the Middle Bronze Age.<sup>33</sup> It has been determined that at the beginning of the

<sup>27</sup> Roberts/Uckelmann/Brandherm 2013, 18–19; Mataloto/Martins/Monge Soares 2013, 330.

<sup>28</sup> Del Lucchese 1998.

<sup>29</sup> Gascò 2009, 19.

<sup>30</sup> Gascò 2009, 21–25.

<sup>31</sup> Lopez Cachero 1999, 72–73.

<sup>32</sup> Armada *et al.* 2013, 280–286. 291.

<sup>33</sup> Maestre *et al.* 2016, 86.

*Bronze Final I* some sites were abandoned and others remodelled. In the *Bronze Final I* there is an increase in open settlements on plains, while in the *Bronze Final II* fortified sites begin to appear;<sup>34</sup> and in the *Bronze Final III* several settlements are in plain areas with many small open settlements and few high-walled settlements and the first Orientalizing settlement.<sup>35</sup> In eastern Andalusia (Malaga and Granada) most of the Late Bronze Age settlements were abandoned: new small settlements appeared, some on hilltops, some not. New hilltop settlements appear, or Late Bronze Age settlements are re-organized with more stable structures linked to metallurgical activities.<sup>36</sup> In the Huelva region, the land of the so-called *Tartessos*, walled settlements in control of the main copper sources were already present between the 11<sup>th</sup> and 9<sup>th</sup> centuries BC, well before the first contacts with the Phoenicians, in a context of economic and social intensification. There are a few large settlements, with a walled acropolis, surrounded by small open settlements:<sup>37</sup> between 1200 and 750 BC the settlements with walls number 24 and those that are open – 73. This is a period that first experienced Mycenaean contacts (until the 12<sup>th</sup> century BC), then pre-Phoenician contacts (11<sup>th</sup>–10<sup>th</sup> centuries BC), and then Phoenicians (9<sup>th</sup>–8<sup>th</sup> centuries BC).<sup>38</sup>

Finally, in Portugal, in the central Alentejo, the *Bronze Final do Sudoeste* is characterized by 17 small fortified settlements on hilltops (4 also occupied in First Iron Age), 5 big fortified settlements on a hilltop (3 also occupied in the First Iron Age), 35 small open settlements (one also inhabited in the First Iron Age). With reference to the previous *Bronze Pleno do Sudoeste* (58 all open settlements on a plain) there are more or less the same number of settlements, but with the real birth of the fortified settlements.<sup>39</sup> In the Portuguese Estremadura, in the area of the Tagus Estuary, *Bronze Final do Sudoeste* is characterized by 11 fortified settlements on hilltops, 4 of which show traces of frequentation also in the Early

Iron Age, with other inhabited areas open or on the plain or on the hilltop, but without defensive measures.<sup>40</sup>

### Case study 1: the *castellari* in Liguria

Positioned in the junction of the Alps with the Apennines, between the Côte d'Azur and Tuscany, in a position between the northern Tyrrhenian Sea and the Po Valley, Liguria has a territory predominantly mountainous (65%) and hilly (35%), being affected by the last stretch of the mountain chain of the Apennines that in Liguria join with the first section of the Alpine chain (Alpi Marittime) at the Colle di Cadibona (**Fig. 1**). The mountain arch that separates the Ligurian coast from the Po Valley is a watershed and is crossed by numerous passes that connect the maritime side with that of the Piedmontese and Emilian Po Valley. The mountain slopes are mostly harsh, especially those that descend from the Apennine watershed towards the coast. The watershed ridge between the Tyrrhenian coast and the Po Valley, both from west to east and towards the coast, allows easy ridge paths. The only plains of small dimensions are found along the coast at the mouth of major torrents. The coast is rich in natural landings, in conjunction with rocky and deep anchorage grounds.

Liguria is characterized by frequent habitations in caves<sup>41</sup> and by a single example of a walled settlement<sup>42</sup> of the Early Bronze Age (according to the chronology in northern Italy, the 21<sup>st</sup>–17<sup>th</sup> centuries BC)<sup>43</sup> with a widespread, but not significant, relevance for the material culture of both the Rhone Valley (above all metallurgy) and the Polada Culture (pottery).<sup>44</sup> In the Middle Bronze Age (according to the chronology in northern Italy, 16<sup>th</sup>–14<sup>th</sup> centuries BC)<sup>45</sup> a progressive habitation of open-air sites begins, and it is during this period that we have the first examples of terraced settlements with an affinity of the material culture

<sup>34</sup> Maestre *et al.* 2016, 92. 95.

<sup>35</sup> Maestre *et al.* 2016, 97–98.

<sup>36</sup> Lull *et al.* 2013, 613.

<sup>37</sup> Gomes Toscano/Campos Carrasco 2008, 135.

<sup>38</sup> Gomes Toscano/Linares Catela 2014, 139. 151.

<sup>39</sup> Calado/Barrada/Mataloto 1999, 363–378; Serra/Porfirio 2017, 214–215. 218–219.

<sup>40</sup> Arruda *et al.* 2017, 80–81.

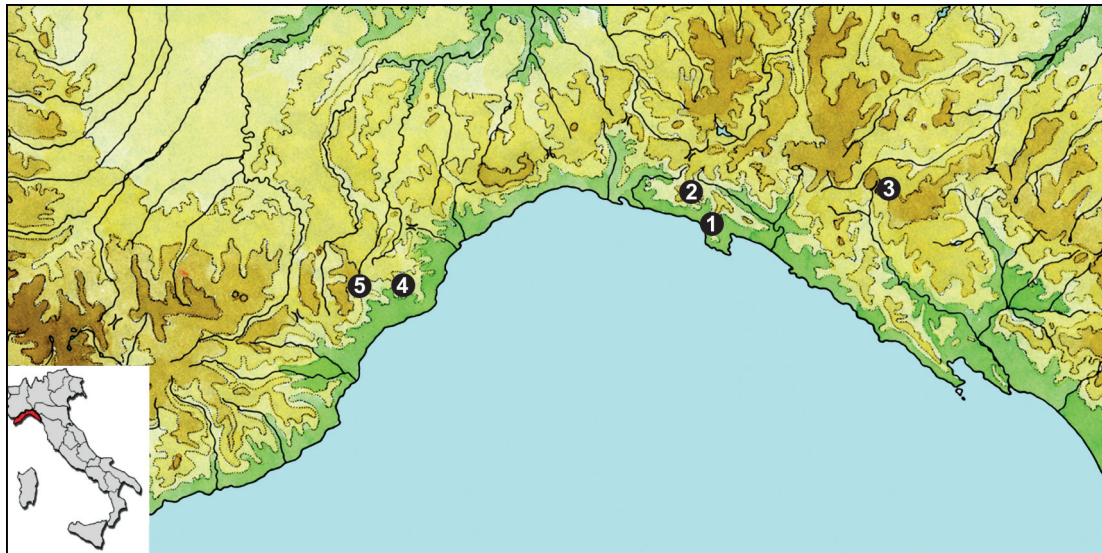
<sup>41</sup> Del Lucchese 1998.

<sup>42</sup> Del Lucchese 2014.

<sup>43</sup> Delfino 2014, 10.

<sup>44</sup> Delfino/del Lucchese in press.

<sup>45</sup> Delfino 2014, 10.



**Fig. 1** Liguria and hilltop walled settlement in the 13<sup>th</sup>–12<sup>th</sup> centuries BC: 1 Castellaro di Camogli (15<sup>th</sup>–13<sup>th</sup> centuries BC); 2 Castellaro di Uscio (Bronze Age phase 10<sup>th</sup>–9<sup>th</sup> century BC); 3 Castellaro di Zignago (13<sup>th</sup> century BC); 4 Bric Reseghe (13<sup>th</sup> century BC); 5 Sant'Antonino di Perti (13<sup>th</sup>–12<sup>th</sup> centuries BC) (map by D. Delfino on the basis of Chair of Prehistory and Protohistory of State University of Milan)

with the *facies* of Viverone, the western alpine area and the Terramare.<sup>46</sup> In the Late Bronze Age (according to the chronology in northern Italy, 13<sup>th</sup> century BC)<sup>47</sup> there is a consolidation of the use of hilltop settlements with walls, with an affinity to the material culture of the western alpine area and the Terramare.<sup>48</sup> In the Final Bronze Age (according to the chronology in northern Italy, 13<sup>th</sup> century BC)<sup>49</sup> both the use of hilltop walled settlements and an affinity with the western alpine world in the material culture continue.<sup>50</sup> The terraced hilltop settlements surrounded by walls in Liguria, but also in Provence, are designated *castellari*.

The first survey and study about the *castellari* go back to Luigi Bernabò Brea<sup>51</sup> and Oscar Giuggiola,<sup>52</sup> to then continue with the most substantial research in the field by Tiziano Mannoni and collaborators,<sup>53</sup> preceded by a fundamental study on depositional dynamics in hilltop contexts.<sup>54</sup> It was thanks to these studies that between the 1970s and 1980s the construction of some *castellari* in the Bronze Age was ascertained, not only during the

Iron Age, and that refined techniques of data collection in hilltop sites were developed. Some *castellari* were recognized and scientifically investigated between the 1980s and the 1990s of the 20<sup>th</sup> century, thus expanding the framework of knowledge: not only with regard to distribution, dating and the number of *castellari*, but also with regard to the activities that were carried out there. In a work on settlement patterns in Liguria during prehistory and protohistory<sup>55</sup> it is affirmed that only the walled settlements of the Iron Age are considered true *castellari*. However, recent discoveries, especially in the metropolitan area of Genoa,<sup>56</sup> show that located there are settlements surrounded by very massive walls, and therefore with the probable function of fortification, since the Early Bronze Age. This leads to a first consideration: is an evolutionist model applicable here that views walled settlements considerable as fortifications starting only in a certain period. To confirm this, the hilltop walled settlement of Bric Reseghe, dated to the Late Bronze Age, shows that it already started during the advanced stages of the Bronze Age.

Bric Reseghe is located on a height of 317 m asl about 2 km in the hinterland of the marine coast, positioned in a control point of the small valleys that allow the passage from the west to the east in the hinterland, as the sea coast is very impervious (**Fig. 2**). The height where the settlement is located

<sup>46</sup> Del Lucchese 2004; Delfino/del Lucchese in press.

<sup>47</sup> Delfino 2014, 10.

<sup>48</sup> Delfino/del Lucchese in press.

<sup>49</sup> Delfino 2014, 10.

<sup>50</sup> Delfino/del Lucchese in press.

<sup>51</sup> Bernabò Brea 1941; 1942; 1946.

<sup>52</sup> Giuggiola 1959.

<sup>53</sup> Mannoni/Tizzoni 1980; Fossati/Milanese 1982; Fossati/Messina/Milanese 1985.

<sup>54</sup> Mannoni 1971.

<sup>55</sup> Odetti 2003.

<sup>56</sup> Del Lucchese 2014.

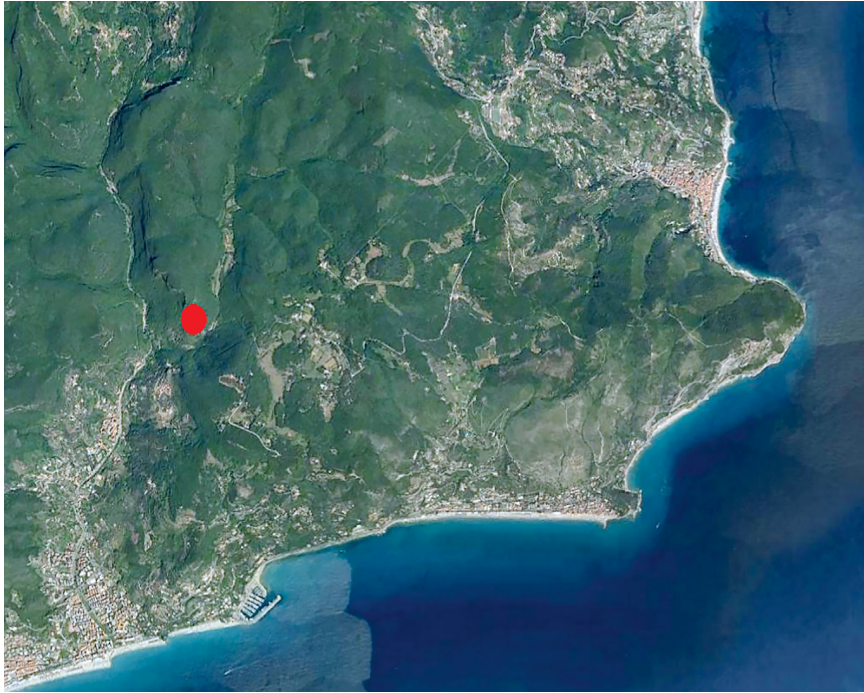


Fig. 2 Position of the Bric Reseghe settlement on the western coast of Liguria (by Google Heart)

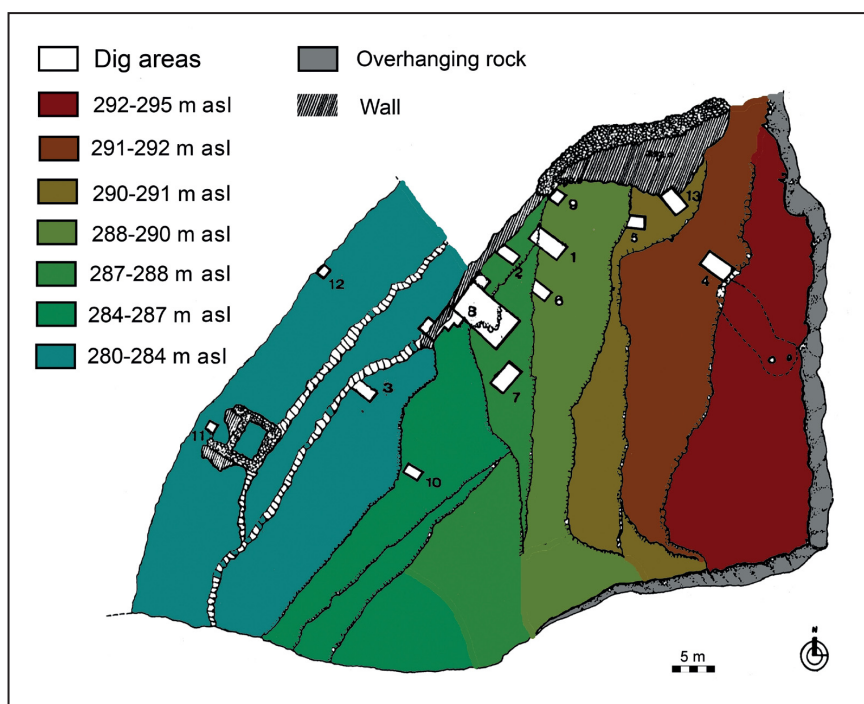


Fig. 3 The area of Bric Reseghe with a plan of the wall (elaborated by del Lucchese 1997)

has very impervious slopes and can be seen from afar due to its shape, suitable for hosting a place with defensive characteristics. The area of the settlement is located slightly lower than the summit's maximum height (Fig. 3), and it is bounded in its lower altitudes by the collapse of a dry stone wall that is at least 45 m long, in places often 8 m high and 3 m high. According to the measures of col-

lapsed material, it can be deduced that the wall was at least 2 m high in at least 3 m of thickness.

There are no traces of occupation that date before the Middle Bronze Age 3/Late Bronze Age.<sup>57</sup> More probably they date to the Late Bronze Age only, according to the pottery decorations and

<sup>57</sup> Del Lucchese 1997, 72–74.



Fig. 4 The wall surrounding the settlement in Bric Reseghe (from del Lucchese 1998 Fig. 3)

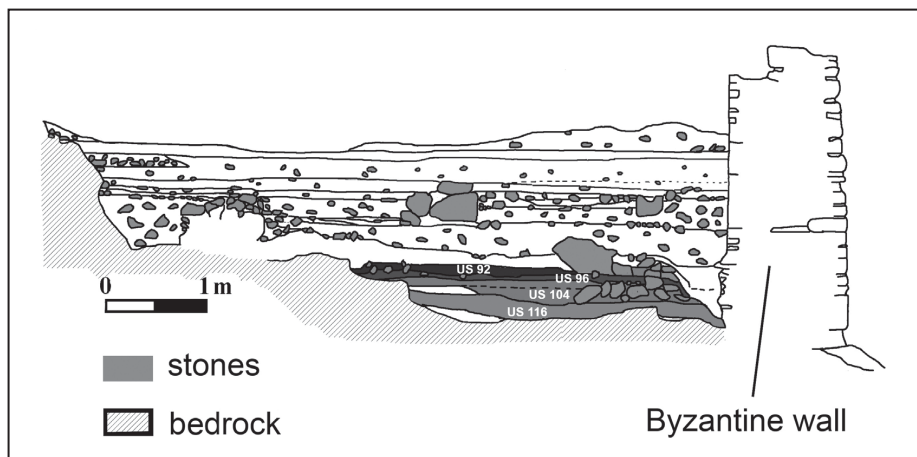


Fig. 5 The stratigraphic sequence of Sant'Antonino di Perti. In grey scale the Late Bronze Age layers (elaborated from Falcetti *et al.* 1994)

shapes and to the bronze objects.<sup>58</sup> The wall in dry stone discovered in the 1980s (Fig. 4) is a clear indication of the inhabitants' will to fortify the settlement. The wall's characteristics are its great thickness, a height that goes beyond the need to contain terracing and, above all, the fact that the wall closes only the most accessible part of the hilltop where the inhabited area was located. In fact, at least half of the perimeter of the settlement does not need walls, because it is on a sheer cliff.

Other cases of walled settlements dated between the Late and the Final Bronze Age in Liguria are

present. However, the known examples apparently do not show wall structures that are definable as fortifications. The *castellaro* of Sant' Antonino di Perti is situated upon a hill, which in itself is a natural rock in control of a valley that leads from the marine coast to the internal Apennines. At present on this hill there are the remains of a Byzantine fortification dated to the 6<sup>th</sup>–7<sup>th</sup> centuries AD,<sup>59</sup> but in the lower layers of the stratigraphic sequence there are levels with material dated to the Late Bronze Age (Fig. 5), among which are some bronze arrow points.<sup>60</sup>

<sup>58</sup> Delfino 2014, 128.

<sup>59</sup> Mannoni 2001.

<sup>60</sup> Delfino 2014, 131–133.

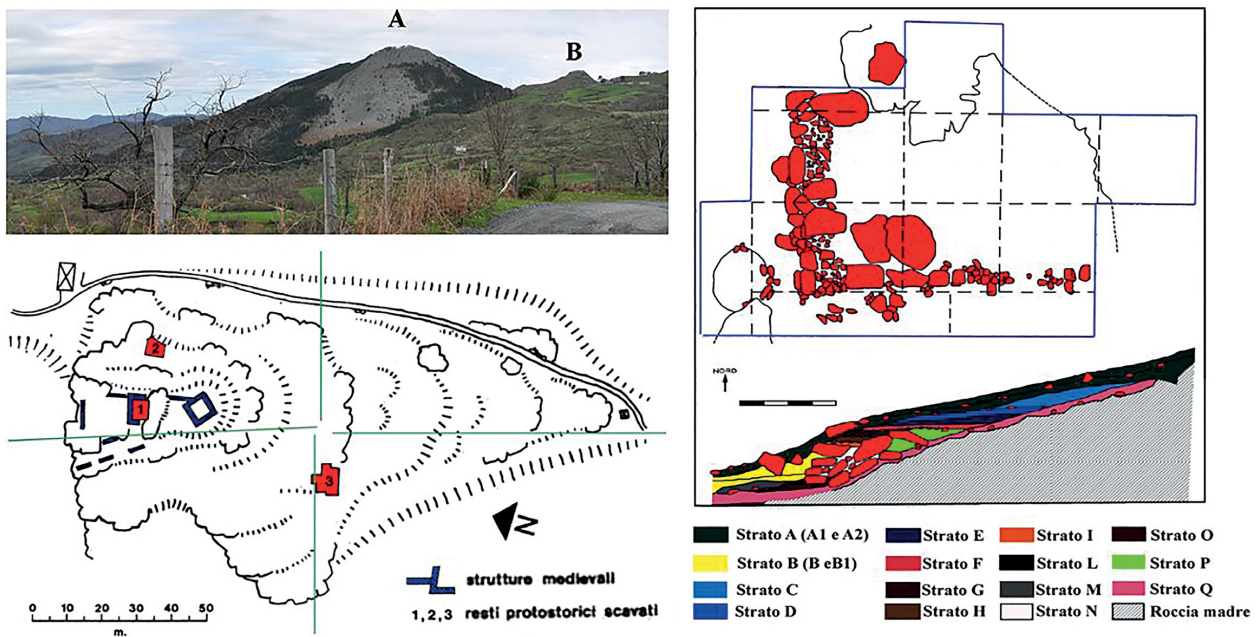


Fig. 6 An example of “pure terracing walls” in the Castellaro di Zignago (elaboration from Mannoni/Tizzoni 1980)

In the stratigraphic sequence is possible to note that the wall of the Bronze Age was damaged by the Byzantine wall.

Even though the evidence of a possible fortified settlement of the Late Bronze Age is hidden by the Byzantine structures, the pre-existence of a wall is quite evident. Again, the discovery of three bronze arrowheads, linked to the Late Bronze Age layers, makes the hypothesis of a fortified village on this site more concrete. Even more so, because it is located upon a very high hill and because it was chosen in the Byzantine era to establish a fortification.

Also in eastern Liguria are some walled and terraced settlements: in the Late Bronze Age the Castellaro di Camogli, Castellaro di Zignago, Castellaro di Pignone,<sup>61</sup> and in the Final Bronze Age the Castellaro di Uscio.<sup>62</sup> In all of the cases, however, these are settlements with masonry structures that are mainly functional as terracing and whose dimensions, especially in height, lead us to consider these walls as different from the wall in Bric Reseghe (Fig. 6). However, it remains a singular fact that these settlements on high ground and with walled terraces developed only starting with the Late Bronze Age. Moreover, similar to the *castellaro* of Sant’ Antonino di Perti, in the *castellaro* of Zignago a Byzantine tower was built inside the protohistoric settlement.<sup>63</sup>

## Case study 2: the *castros* in the Portuguese Middle Tagus Valley

The region is structured around the Tagus valley, where the three main geomorphologic units of the west Iberian Peninsula converge: the calcareous Estremenho Massif which delimits the territory to the west and northwest and connects with the Atlantic coast; the Hesperic Massif that delimits the territory to the east and southeast and connects with the Great Iberian Meseta, and finally, the detrital complex where the Tagus Valley opens and connects the region with the river estuary located about 60 km downstream. In particular, the Hesperic Massif is characterized by a quartzite ridge that circumscribes an area rich in auriferous resources: from the river Zêzere to the river Ocreza (Fig. 7). The history of research in this region, relative to the Bronze Age, is quite recent: the study on bronze hoards,<sup>64</sup> the excavation of a settlement<sup>65</sup> and the identification of another settlement<sup>66</sup> were made between the 1940s and the 1980s. Only in the 1990s and first decades of the 21<sup>st</sup> century has work developed that produced enough data.<sup>67</sup>

Since there is not yet a specific study on the entire period of Bronze Age in the region, we can

<sup>61</sup> Delfino 2014, 40–62. 63–89. 168–170.

<sup>62</sup> Maggi 1990.

<sup>63</sup> Mannoni/Tizzoni 1980.

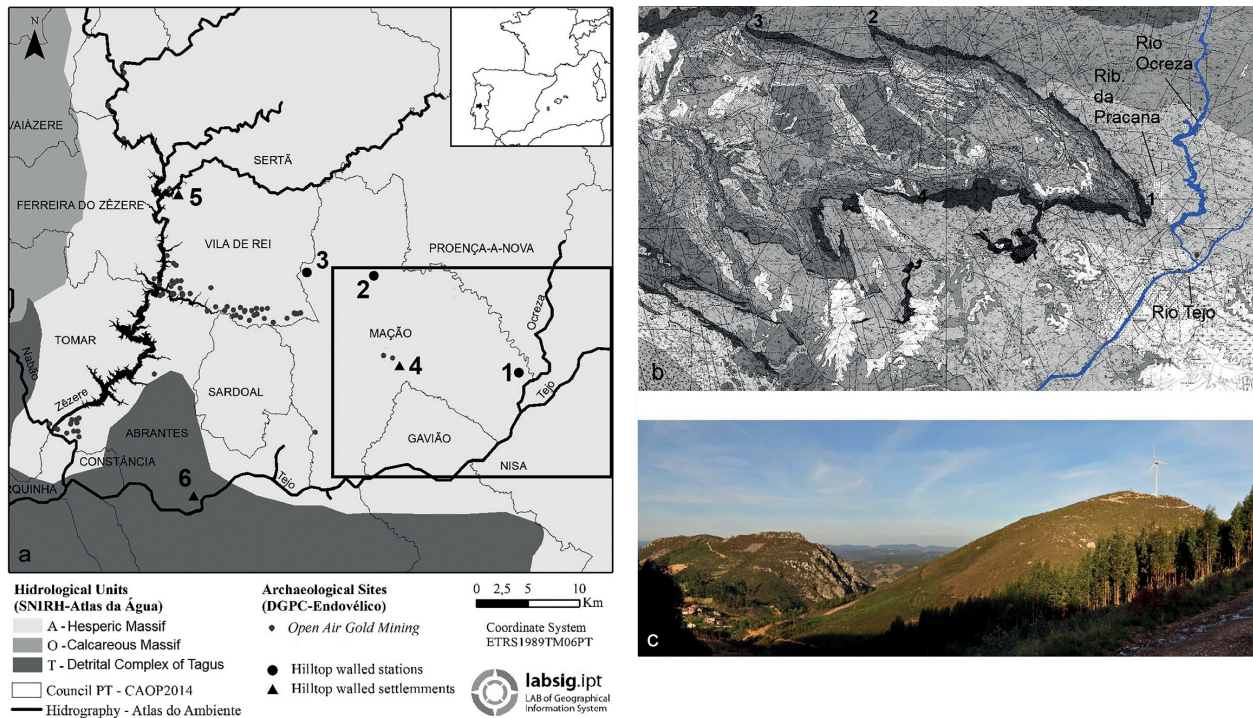
<sup>64</sup> Jalhay 1944.

<sup>65</sup> Horta Pereira 2017.

<sup>66</sup> Candeias/Batista/Gaspar 2010.

<sup>67</sup> Félix 1999; Batata/Gaspar 2000; Delfino *et al.* 2014; Delfino 2016b.





**Fig. 7** The Portuguese Middle Tagus Valley: **a** General distribution of the settlements (1-3 small walled settlements; 4 Castelo Velho do Caratão; 5 Cerro do Castelo; 6 Castelo de Abrantes); **b** The inner part with walled settlements around a closed area; **c** One of these small walled settlements, the Castelo Velho da Zimbreira (photo after Delfino/Cura 2017)

base the overview only on the following data. It is very difficult to define a habitation in the Early Bronze Age and Middle Bronze Age, due to the lack of contexts. Datable materials are represented only by a few isolated finds that can be dated to the Castelo de Abrantes<sup>68</sup> (which hosted a hillfort in the Final Bronze Age), or due to the reuse of funerary monuments dated to the Late Neolithic/Chalcolithic (Conheira de Penhascoso, Anta 1 de Val da Laje, Anta da Foz do Rio Frio and Colos) or by material from small open settlements dated between the Chalcolithic and the Early Bronze Age (like Maxial, Bioucas I, Agroal).<sup>69</sup> Also, the surrounding region (Hight Alentejo, Spanish Extremadura and northern Robatejo/Pinhal) does not present sufficient typological references for the periods Early Bronze Age and Middle Bronze Age (as they are understood in the common European relative chronology Bz A2–Bz C2) sufficient typological references to be able to differentiate these periods,<sup>70</sup> or if you will, only a few elements.<sup>71</sup>

More elements are present for the Final Bronze Age I and II. In an overview it is possible to distinguish in the Final Bronze Age I (13<sup>th</sup>–10<sup>th</sup> centuries BC) a land occupation characterized by a few hilltop settlements with walls (**Fig. 7a, nos. 4–6**), probably surrounded by small open settlements, in the plain of the Tagus. Probably the three main settlements were established in a strategic area for communication within commercial networks, created with the late arrival of bronze metallurgy in the region,<sup>72</sup> and for the exploration of the local gold resources.<sup>73</sup> In addition, the incineration rite in an urn was introduced.<sup>74</sup> In the Final Bronze Age II (10<sup>th</sup>–7<sup>th</sup> centuries BC) there is a phenomenon of increasing the walled sites and of renovating the walls of some of the previous sites. This is the case of the Cerro do Castelo, where after a fire, a wall four meters thick was built.<sup>75</sup> With reference to the new walled hilltop sites that arise, the case of Castelo Velho da Zimbreira is emblematic. It is situated upon a prominent rise in a quartz-

<sup>68</sup> Delfino 2015, 56. 61.

<sup>69</sup> Delfino *et al.* 2014, 153–156. 189.

<sup>70</sup> Mataloto 2006, 103–105.

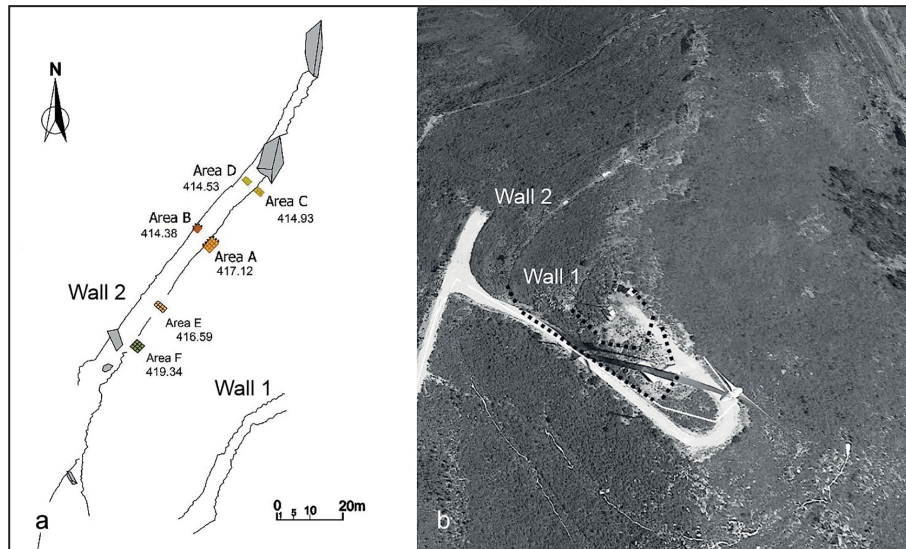
<sup>71</sup> Pavon *et al.* 2017, 93–94; Félix 2014, 234.

<sup>72</sup> According to Senna Martinez (2007) bronze metallurgy on the Atlantic side of the Iberian Peninsula began between the 14<sup>th</sup> and 13<sup>th</sup> century BC.

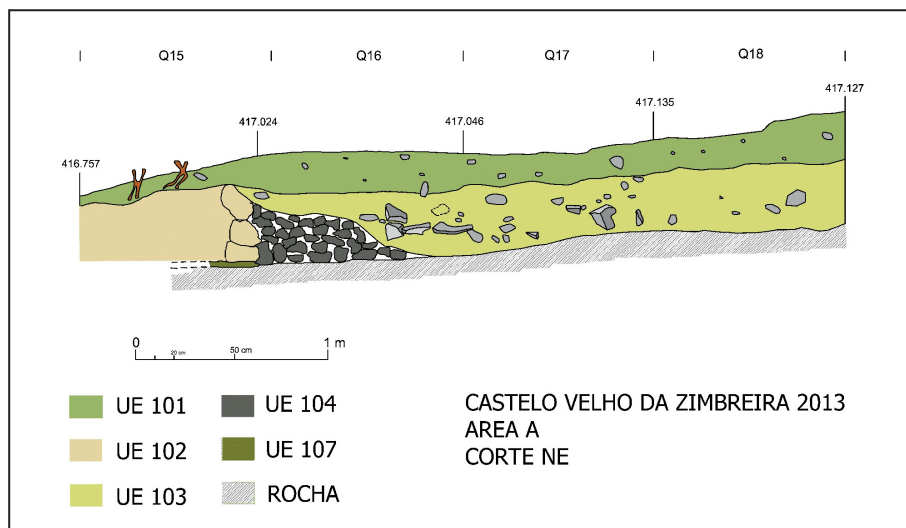
<sup>73</sup> Delfino/Romão/Gaspar 2015, 200.

<sup>74</sup> Cruz/Delfino/Graça 2013.

<sup>75</sup> Batata/Gaspar 2000.



**Fig. 8** Castelo Velho da Zimbreira: **a** Plan of the archaeological work by the Museum of Pre-historic Art of Mação and by the Geosciences Center of the University of Coimbra; **b** Aerial view (after Delfino/Cura 2017)



**Fig. 9** Castelo Velho da Zimbreira. Archaeological section of Area A (drawing by P. Cura, Museum of Prehistoric Art of Mação)

ite ridge near a natural gap entering the territory (**Fig. 7b, no. 1**). The site is bordered by two walls. Research (2011–2016) has been interested in the external wall (**Fig. 8**) and was able to recover handmade ceramic material dating to the Final Bronze Age (burnished decoration, typical handles and shapes). The masonry technique of the wall could be recognized (removal of blocks of bedrock to create a plane surface on which to build the dry block wall) and dated. In two areas along the wall, A and E, a layer ‘UE 107’ was identified, which consisted of only coals that were under the wall and above the bedrock (**Fig. 9**). No layers with ceramics were found below UE 107; this is completely sterile.

The dates made through AMS revealed the following data: BETA 379735 2590 +/- 30 BP (Cal BC 805 to 770) and BETA 380312 3010 +/- 30 BP (Cal BC 1145 to 1130). This shows that fires had occurred repeatedly on the hill since the 12<sup>th</sup> century BC in the uninhabited site; and then at an early moment in the 7<sup>th</sup> century BC<sup>76</sup> the wall, which measures about two and a half meters in width, was built. Due to their characteristics of thick walls and the

<sup>76</sup> It must be counted that at the turn of the millennium the radiocarbon dating in the Iberian southwest is over a hundred years due to so called “Iron Age catastrophe” according to Hagens 2006 and Jordà Pardo *et al.* 2009, 85. 87.



**Fig. 10** Castelo de Abrantes: **a** The hill of the castle; **b** Aerial view with indication of the Final Bronze Age finds (red points) and the hypothetical perimeter of the Final Bronze Age hillfort (red line) (a: photo by N. Queiroz; b: photo by Google Heart)

position of the respective sites, both the Cerro do Castelo and the Castelo Velho da Zimbreira can be considered fortified sites. Perhaps the Castelo Velho da Zimbreira seems to be only a fortified station and not a permanent settlement. The fact that it had a short life phase, which perhaps can only be included in the 7<sup>th</sup> century BC (based on the complete absence of material from the Iron Age such as lathe pottery, and in the absence of archaeological phases before the 7<sup>th</sup> century BC), and the fact that there are no traces of strategic activity like metallurgy, leads one to think that this was a sort of shelter fence. If it is conceivable that for the erection of the sites of the Final Bronze I the necessity for control over paths of communication in the field of the circulation of metals arose, for this second phase of fortifications it is necessary to look at some events that seem to occur in the zone of Abrantes.

The Castelo di Abrantes (**Fig. 10**), today a nineteenth century AD fortress implanted on a former seventeenth century AD fortress, which stood upon a medieval castle,<sup>77</sup> is built upon a hill dominating the Tagus, where in the Final Bronze Age walled hilltop settlement existed. Recent works by the Municipality of Abrantes (2013–2016) show that the perimeter of the protohistoric settlement coincides with the perimeter of the modern fortress.

The protohistoric layers, found adjacent to the original protohistoric line of the wall, but then reused in Islamic times, yielded ceramics that are typical of the Final Bronze Age (burnished pottery and typical carinated shapes); some AMS datings of the layer UE 16 (**Fig. 11**) indicate a chronology: BETA 423153 2430 ± 30 BP (Cal BC 750 to 685).

Also an OSL dating on the soils indicates that layer 16 is protohistoric, according to the energy absorbed (**Fig. 12**).<sup>78</sup> As can be seen in the washout schema (**Fig. 11**), layer 16 is a sediment relative to the protohistoric habitation of the settlement. It was washed downstream of the wall after the abandonment of the site. It does not contain more recent material, such as Roman or medieval, so it can be considered as sealed by the collapse of the stones of the protohistoric wall. It contains more recent material (Iron Age) at its base, and more ancient material (Final Bronze Age) at the top, which complies with the principles of inverse stratigraphy that appear in the process of a washout of walled hilltop sites.<sup>79</sup> Found at the base of the layer were some fragments of Gaditan (Phoenician) red slip pottery among the pottery of the Early Iron Age; among these is a bifid handle, part of a pithos with this type of handle with the two joined but distinct ceramic curbs, which can be dated in a period between the 7<sup>th</sup> and 6<sup>th</sup> centuries BC.<sup>80</sup>

These data lead us to think that in the transition period between the Final Bronze Age and the First Iron Age there were contacts along the Tagus River between local populations settled in the area of Abrantes and the Phoenicians settled in the lower valley of the Tagus. For now a Phoenician presence in Abrantes is to be discarded,<sup>81</sup> more probably the few pieces of Gaditan ceramic found, arrived in Abrantes as a result of commercial exchange. At the

<sup>77</sup> Portocarrero/Gaspar 2015.

<sup>78</sup> Kinnaird/Delfino 2014.

<sup>79</sup> Mannoni 1971.

<sup>80</sup> Personal communication by Prof. Ana Arruda.

<sup>81</sup> Due to the reduced number of Gaditan pottery compared to the number of Bronze Age tradition hand-made local pottery.

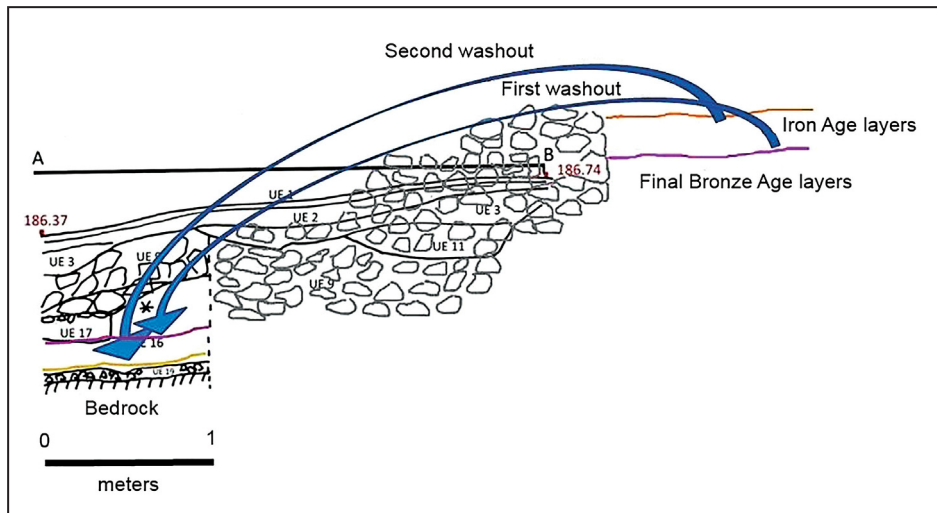


Fig. 11 Castelo de Abrantes. The general dynamics identified in area 1. Layer 16 is between violet and yellow line in the stratigraphic sequence on the left (drawing by the author)

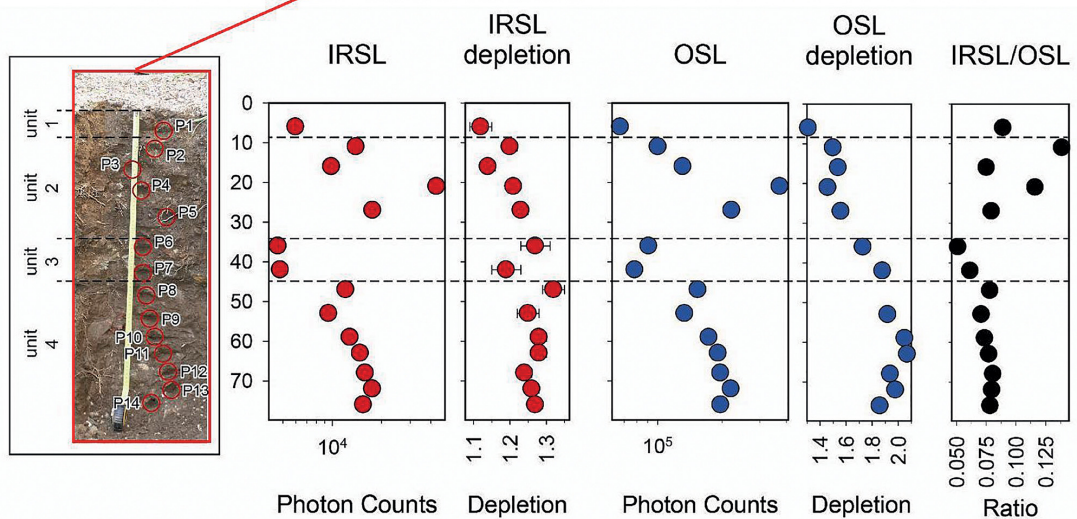


Fig. 12 Castelo de Abrantes, area 1. Layer 16 is on the bottom of the Unit 4 (after Kinnaird/Delfino 2014)

Chronology	Number of new fortified sites	Distribution in the territory	Causes
13 <sup>th</sup> –9 <sup>th</sup> century BC	3	Widespread	Emergence of bronze metallurgy, traffic control
7 <sup>th</sup> century BC	3	Inland only	Conflict between coastal communities and the inland for gold resources

**Tab. 2** Two phases of ‘castling’ in the Final Bronze Age Middle Tagus Valley

same time in inland areas rich in gold resources in the fossil sands, there was a need for fortification, as in the case of the Castelo Velho da Zimbreira and the Cerro do Castelo. At this point the question arises: fortify against whom? Perhaps against the populations living along the Tagus, for example in the Castelo de Abrantes, who traded with the Phoenicians and therefore needed to seize all gold resources in the region, in addition to those sources available in the immediate vicinity of the Tagus? This is a hypothesis that would explain this second stage of appearance of fortified sites according to the scheme shown in **Table 2**. Therefore, two phases of ‘castling’ in the region can be assumed throughout the whole Final Bronze Age.

### A symbolic practicality of some hilltop enclosures in the Final Bronze Age?

Taking some data emerging from the examined hillforts into account, there are some common factors: all of the hillforts have impressive walls; all are positioned on hills that are noticeable in the landscape and with very steep slopes; they do not show apparent signs of attack or destruction. Now with this archaeological data we return to psychophysiological theories discussed in the introduction and apply them to the theme here. With certainty, a fortified enclosure around a settlement<sup>82</sup> or a fortified enclosure as found here, that delimits an area where refuge can be sought in the case of danger,<sup>83</sup> would meet the needs of those not used to undergoing Universal Human Phobia (UHF).

These are places that help not to be caught off guard, as it could happen in an open settlement, especially in the lowlands or on the hills. So this is

not really starting from the “yellow” condition, but at least reacting better to the moment of the shock that leads to the “red” condition. These places favor the “group factor”, all being inside a well-defined space that favors cohesion in defense, or at least not fleeing. According to the theory of the “death field” strategy, those persons with their back to the wall fight with more tenacity: being inside a fortified enclosure from which they cannot escape because they would abandon all their belongings and abandon a safe haven. These can be force factors even for people who are not used to combat. Finally, taking also the theory of the “bigger bang” into account, the “bang” is not always necessarily sonorous: For a group of warriors ready to attack a fortified enclosure that from a distance seems very solid, imposing upon a high hill and with steep slopes, this is certainly an excellent deterrent factor. It would therefore be logical to interpret some hilltop enclosures as having symbolic purposes linked to war needs.

Symbolism thus becomes merely practical, in an oxymoron that implies the utility of the enclosures to ensure that their guests defend themselves better and the attackers are unwilling to assault them.

### ‘Castling’ as a social phenomenon in the Final Bronze Age in southern Europe?

Creating new enclosures on a large geographic scale within a few centuries means a phenomenon-making epoch, especially if these enclosures are at the same time set on steep heights and not in the plains or on low hills. Despite this, during the Final Bronze Age there is no such phenomenon for the whole duration of the period nor in the whole territory concerned, instead in some regions only in some moments and in other regions at certain other times (**Tab. 3**).

In any case it is clear, basing on the proposed arguments, that these were actions to defend settlements and not pure symbolism.

<sup>82</sup> Like the cases of the Cerro do Castelo, or the Castelo de Abrantes, or Sant’ Antonino di Perti.

<sup>83</sup> Like the case of Castelo Velho da Zimbreira, or probably Bric Reseghe.

	13 <sup>th</sup> cent. BC	12 <sup>th</sup> cent. BC	9 <sup>th</sup> –8 <sup>th</sup> cent. BC	8 <sup>th</sup> –7 <sup>th</sup> cent. BC
Liguria	2	1	0	0
Middle Portuguese Tagus	3	3	3	5

Tab. 3 Number of certain fortified settlements or enclosures

In Liguria, especially since the 13<sup>th</sup> century BC, it appears that in part of the region, to the west, there are probable fortified settlements, while in the east there are terraced settlements with far less clear evidence that they were also fortified. For the sites of Castellaro di Camogli, Castellaro di Zignago and Castellaro di Uscio the walls do not seem to be massive enough to suggest fortifications. This interpretation, however, is limited by the scarce area excavated in each site, also as a function of the study of external masonry walls.

In the Portuguese Middle Tagus Valley all of the settlements are clearly fortified since the 13<sup>th</sup> century BC, with an increase in fortifications in the 8<sup>th</sup>–7<sup>th</sup> century BC. Although we do not wish to venture on the possible causes of the need to fortify or ‘castle’ the inhabited sites, except that in the case of the 7<sup>th</sup> century BC in the Portuguese Middle Tagus, it is clear that starting from the 13<sup>th</sup> century BC there is a widespread phenomenon of ‘castling’. This is manifested in different nuances in each region with one or two ‘castling’ phases depending upon the dynamics that affect each region.

In this case, therefore, we can speak of a phenomenon of ‘castling’ generally widespread in the Final Bronze Age to the southwestern Europe, too, linked to different contingencies that affected at different times, but relatively close in some regions.

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**Davide Delfino, Preparing the Landscape for Conflict. Some Examples of ‘Castling’ during the Final Bronze Age in Southwestern Europe. Between Practical and Symbolic Use of Hilltop Walled Settlements**

In this work we present an overview of the proliferation of walled hilltop sites in southwestern Europe, named *castellari* in Liguria, *castellar* in Provence, *castelo* in Portugal, with the question whether they are real settlements or just fortified enclosures in the Final Bronze Age. In many cases scholars considered only those with a similar context in Iron Ages as real fortifications. But, after a study with the support of psychology and physiology of violence and a careful examination of the structures and their contexts, it is possible to hypothesize their defensive nature also during the Final Bronze Age with less doubt. In this way it is possible to delineate, in a chronologically non-uniform way, in southwest Europe a social phenomenon definable as ‘castling’, and we can link this phenomenon to specific causes. Within this phenomenon, we can consider the use of walls on hilltops as practical-symbolic function concurrently. The case study of the Portuguese Middle Tagus region in Central Portugal and of the Liguria region in northwest Italy, the two extremities of the considered macro-region, are considered.

**Davide Delfino, Die Landschaft für den Konflikt (vor-)bereiten. Einige Beispiele von ‘Castling’ in der Endbronzezeit in Südwesteuropa, zwischen praktischem und symbolischem Nutzen von befestigten Höhensiedlungen**

In dem vorliegenden Artikel geben wir einen Überblick über die starke Zunahme an befestigten Höhensiedlungen in Südwesteuropa in der Endbronzezeit, die in Ligurien *castellari*, in der Provence *castellar* und in Portugal *castelo* genannt werden, seien es nun wirkliche Siedlungen oder nur befestigte Anlagen. In vielen Fällen hielten Forscher nur diejenigen für wirkliche Befestigungen, die in einem der Eisenzeit vergleichbaren Kontext auftreten. Aber unter Berücksichtigung der Psychologie und Physiologie der Gewalt und einer sorgfältigen Untersuchung ihrer Strukturen und Kontexte ist es möglich, auch für die Endbronzezeit mit weniger Zweifel ihren defensiven Charakter anzunehmen. So können wir in Südwesteuropa ein chronologisch uneinheitliches soziales Phänomen, das sich als ‘castling’ definieren lässt, aufzeigen und dieses Phänomen mit spezifischen Ursachen verbinden. Innerhalb dieses Phänomens können wir für die Nutzung von auf Hügeln gelegenen Mauern eine gleichermaßen praktisch-symbolische Funktion erwägen. Die beiden Fallstudien der Region des Mittleren Tagus in Zentralportugal und der Region Ligurien in Nordwestitalien, die beiden Extreme in der entsprechenden Makro-Region, werden erörtert.