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Coppa Nevigata in the Wider Context of Bronze Age Fortified Settlements of South-eastern Italy and the Adriatic Area

The paper presents a reconsideration of settlement pattern and defensive systems in south-eastern Italy during the Bronze Age, on the ground of the archaeological data coming from the excavations at Coppa Nevigata. In particular, the transformations of the defensive lines of the settlement are discussed, which were strictly linked to both defensive and offensive strategies and their changes. Moreover, the paper seeks to examine some related problems, such as the possible origin for the model of complex fortification lines in southern Italy, the pattern(s) of fortified settlement in the Eastern Adriatic and matters related to the social organisation of the Bronze Age southern Italian communities that built the fortification lines.

Introduction

Copper Age funerary contexts and rock art indicate that throughout the 4th and 3rd millennia BC warfare gained a significant socio-ideological dimension in Italy.¹ The vast majority of Copper Age grave goods accompanying adult males include arrowheads that, needless to say, can be related to both hunting and fighting.² Yet, in several cases the assemblages also included maceheads and hammer-axes, which were more likely martial in tone. Indeed, such weapons are frequently portrayed with both statue-stele and rock-art figures belonging to this period.³ From the late Early Bronze Age/beginning of the Middle Bronze Age onwards (c. 1800–1700 BC) the organisation and strategy of warfare in south-eastern Italy became increasingly complex, the major evidence for that being the construction of massive and intricate fortification lines at several settlements.⁴

¹ Cazzella/Guidi 2011, 28.

² Recchia *et al.* 2018.

³ Cocchi Genick 2012.

⁴ This paper presents the views held by the two authors. In particular, G. Recchia has written the following sections: Settlement pattern(s) in Bronze Age south-eastern Italy; Models of inspiration for defensive lines in south-eastern Italy and parallels across the Adriatic; Demography, work force and social organisation behind the building of defensive walls; Concluding remarks. A. Cazzella has written the rest: The fortified settlement of Coppa Nevigata.

Settlement pattern(s) in Bronze Age south-eastern Italy

The phenomenon of fortified settlements develops in south-eastern Italy from the 18th century BC onwards. These settlements, generally long-lasting, were established in particular along the Adriatic and Ionian coasts, but also in sub-coastal and inland key-spots controlling exchange routes (Figs. 1-2). Although a large number of Bronze Age coastal settlements are known, most of them have been only partially explored. A number of them lie under modern cities, such as Giovinazzo, Bari, Mola. Monopoli and Brindisi,⁵ and urban environments have allowed only small trial trenches. Moreover, some important sites were explored in the late 19th to mid-20th centuries, such as Scoglio del Tonno and Torre Castelluccia,⁶ often not following modern archaeological standards. Therefore, except for a few cases, defensive walls are either scantily documented or have not been detected at all, and the exact chronology of the known cases often remains undefined. Nonetheless, a sizable number of sites appear to be provided with defensive lines that mostly consist of massive dry-stone walls, which in all likelihood were built before the mid-2nd millennium BC.⁷ In the most intensively explored areas of the region, the common distance between coastal fortified sites is around 10 km. If we consider a hypo-

⁵ Radina 2010.

⁶ Quagliati 1900; Gorgoglione 2002.

⁷ See also Scarano 2017.

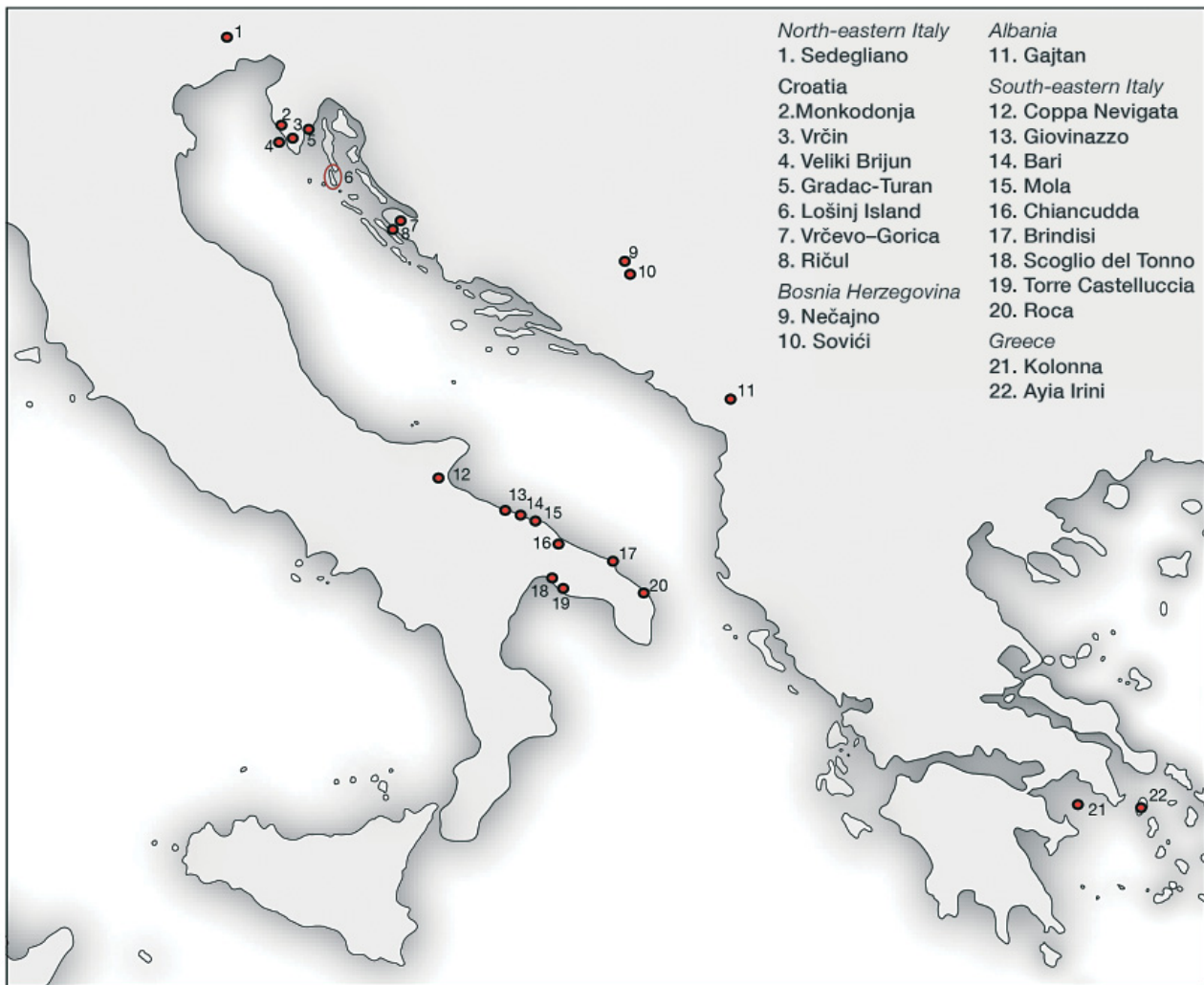


Fig. 1 Bronze Age settlements in south-eastern Italy, the eastern Adriatic and the Aegean mentioned in the text (map elaborated by G. Recchia)

thetical semi-circular shaped territory (given the presence of the sea on one side) for each site, the resulting resource area – without any overlapping – is approximately 40 km² for each.⁸

Apart from the southernmost part of Apulia, both the Adriatic and Ionian coastlines of the region are mostly flat and hence coastal fortified settlements, being located on level promontories, were not actual ‘hillforts’. Defensive lines commonly protect the sites on the side facing inland. In contrast, both sub-coastal and inland fortified sites occupied hilltops that were partially naturally defended. Although our knowledge of the general nature of the southern Italian fortification walls is scarce, it seems that they do differ in size, complexity and defence strategy. In some cases, such as Coppa Navigata and Roca (phase 2),⁹ the defences

appear to be rather elaborate and massive from the earliest phases of construction, while others are possibly simpler, such as the sub-coastal site of Masseria Chiancudda.¹⁰ Does this evidence reflect a lesser need for sophisticated artificial fortifications at some sites, especially those occupying naturally defended locations? Or, to what extent do these differences stem from socio-cultural factors?

Fortification systems in southern Italian Bronze Age settlements doubtlessly had a purely practical and defensive dimension, as is clearly illustrated by cases such as Coppa Navigata and Roca, which we will discuss below. Nonetheless, in all likelihood these defensive lines also had a symbolic function, linked to processes of emulation and competition between neighbouring fortified centres. This does not necessarily imply, however, that any given centre exercised suprema-

⁸ Cazzella 1991; Radina 2010.

⁹ Scarano 2012.

¹⁰ Cinquepalmi/Recchia 2009.

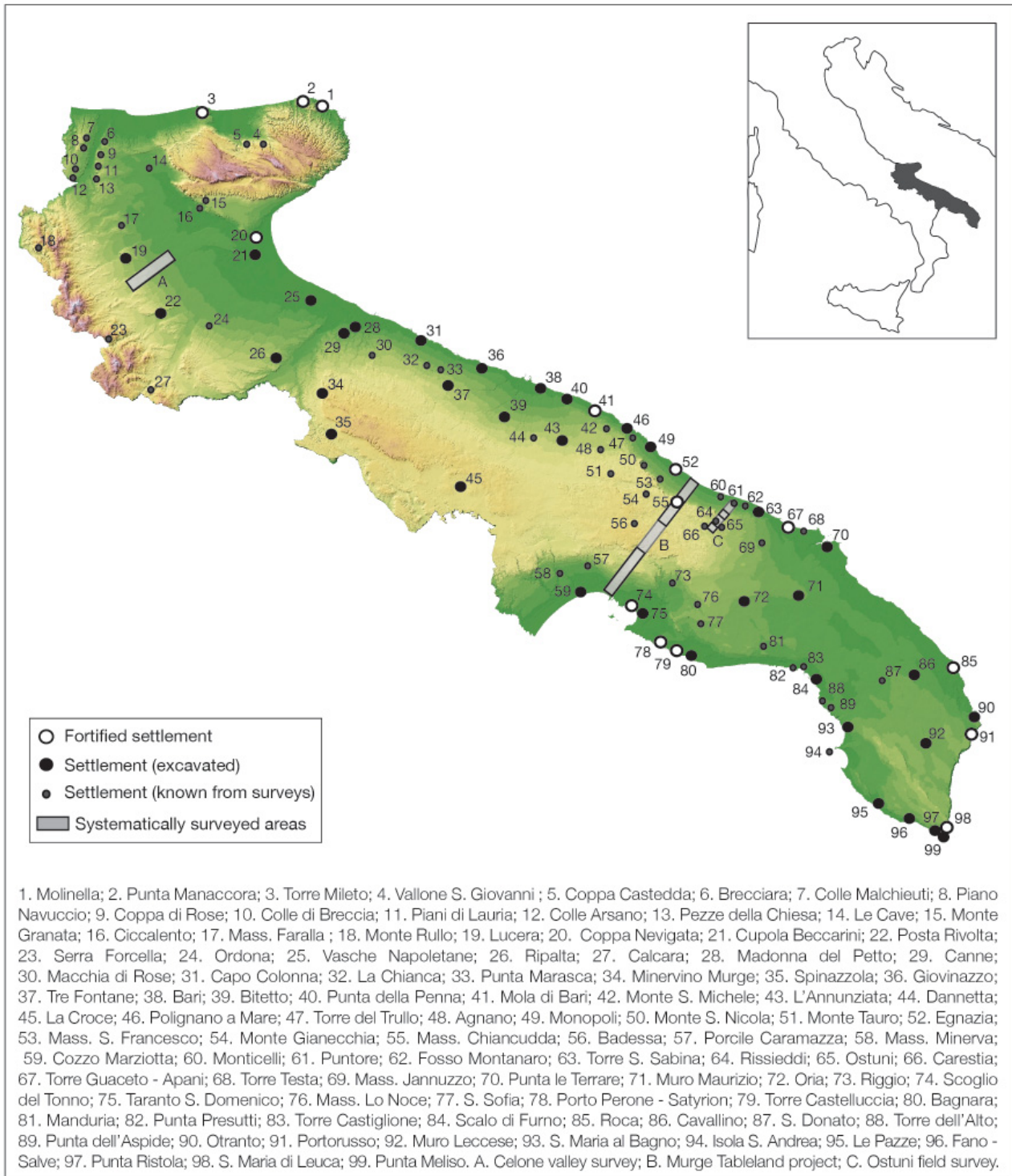


Fig. 2 Distribution map of Bronze Age settlements in Apulia. The label 'fortified site' refers to those sites where defensive lines pertaining to the Bronze Age have been brought to light (map elaborated by G. Recchia)

cy over others.¹¹ As we shall see, the settlements were likely to have been of a limited demographic size that therefore would have hindered their abilities to impose political control over territories of other settlements. Although it is difficult to obtain a reliable estimate of the population of these set-

tlements, we can acquire an approximate picture by correlating the information on the settlement size with that of the population density in comparable ethnographic contexts. Demographic estimates are also helpful in evaluating the amount of labour involved in the construction of the defensive lines and the extent to which each community could have built its fortifications autonomously.

¹¹ Cazzella/Recchia 2013a.



Fig. 3 Coppa Nevigata (northern Apulia). Aerial photo of the archaeological site, excavations 1983–2015 (archive of the Coppa Nevigata Research Project; aerial photos by A.V. Romano 2006, F. Nomi 2010 and B. Mandelli 2015)

Indeed, not all the settlements were fortified. In contrast with the coastal pattern of fortified sites, the occupation of inland areas is mostly characterised by small hamlets that in some cases formed specific clusters.¹² This ‘hamlet’ pattern is mainly known from systematic survey projects and amateur surveys, and only a handful of these small inland sites have been stratigraphically explored. In any case, unlike the long-lasting fortified sites these appear to be short-term villages that possibly moved about across the landscape throughout time.

Assuming that fortified centres did not play a hegemonic territorial role, or at least not until the Final Bronze Age, what are the reasons behind the diverse settlement patterns coexisting in adjacent and connected areas? We are inclined to think that some communities oriented their economy

towards exchange activities and settled in favourable locations; then perhaps they developed some craftsmanship directed towards the exchange network.¹³ Thus, these communities will have particularly felt the need of maintaining their territorial position, protecting the central dwellings from organised attacks, clearly demarking the settlement space and making it easily recognisable. As they developed specialised functions, fortified centres possibly became economic points of reference on a more regional scale. On the other hand, inland small hamlets basically focussed their economy on farming and herding and did not have the need to maintain a given territorial position. These were not politically dependent on the fortified centres. On the contrary, they might have been in competition with them and could have formed (tempo-

¹² Recchia 2009.

¹³ Cazzella 2009; Cazzella/Recchia 2013a.

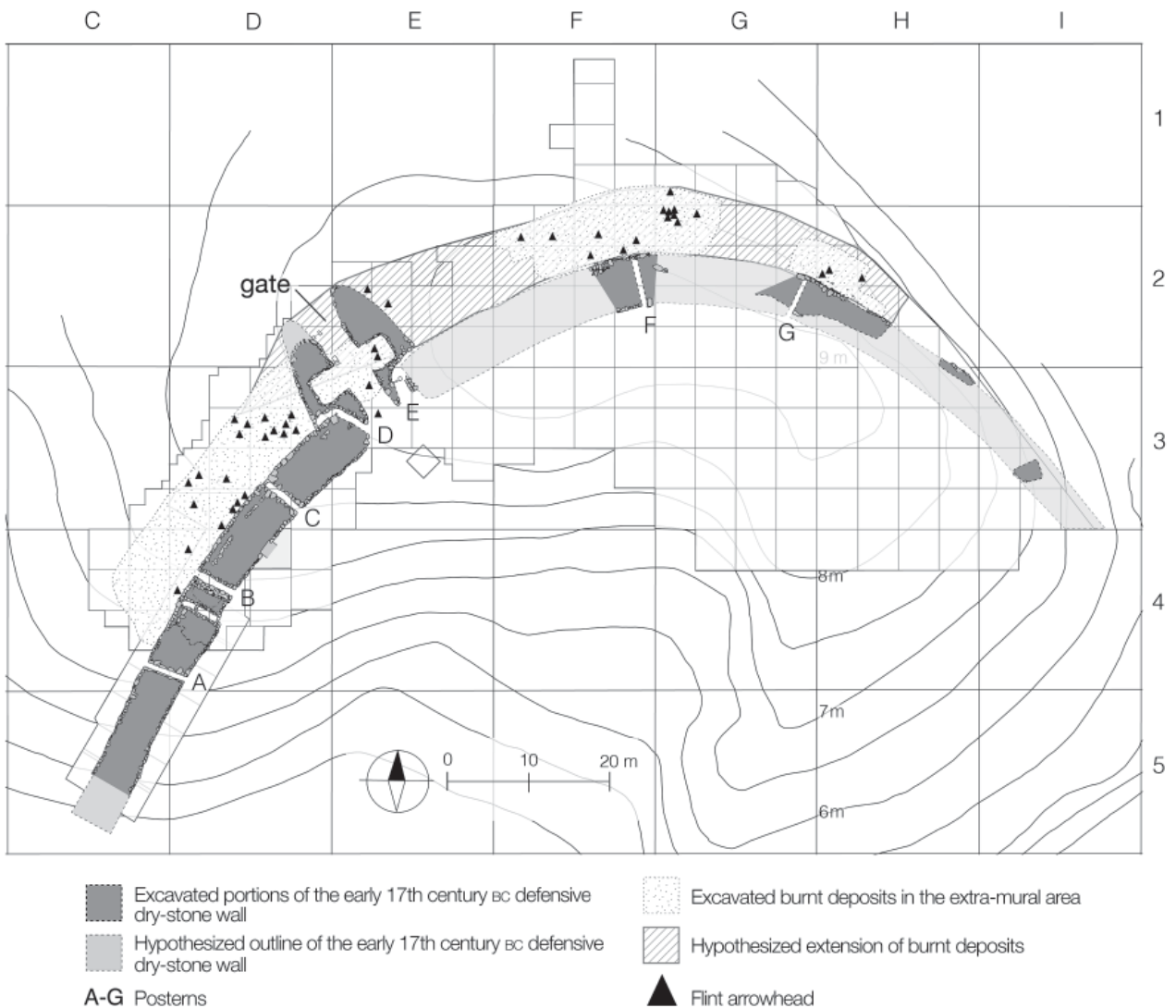


Fig. 4 Coppa Navigata (northern Apulia). Map of the 17th century BC defensive wall and of the burnt deposits outside the wall, dating to late 16th century BC, possibly resulting from an assault. The distribution of the flint arrowheads from the burnt deposits is also shown (archive of the Coppa Navigata Research Project; drawing and elaboration by G. Recchia)

rary) alliances with each other to launch attacks on the fortified centres, but they probably needed the goods that the specialised fortified centres produced or acquired through exchange networks.

We will briefly discuss the Coppa Navigata settlement, particularly focussing on the transformations of the fortification lines over time in relation to possible parallel transformations in polioretics and warfare techniques. Then we will attempt to examine some related problems, such as the possible origin for the model of complex fortification lines, the pattern(s) of fortified settlement in the Eastern Adriatic (an area that had close relationships with northern Apulia) and matters related to the social organisation of the Bronze Age southern Italian communities that built the fortification lines.

The fortified settlement of Coppa Navigata

The fortified settlement of Coppa Navigata (**Fig. 3**), located in northern Apulia just south of the Gargano promontory, is one of the most extensively excavated Bronze Age sites in Italy.¹⁴ It was continuously settled for roughly one millennium, up to the Early Iron Age (c. 18th–8th centuries BC), and a wide series of 14C dates provides a detailed chronology for the various phases of occupation and the transformation of the fortification lines through time.¹⁵ Unlike the vast majority of the coastal fortified sites in south-eastern Italy, the settlement of Coppa Navigata did not directly front the sea. In fact, it was located on the inland shoreline of an

¹⁴ Cazzella/Recchia 2012.

¹⁵ Calderoni *et al.* 2012.

ancient navigable lagoon, now reclaimed, which at the same time connected the site to the sea and provided protection against maritime attacks.

The earliest fortification line (c. 1700–1500 BC)

The earliest fortification wall at Coppa Nevigata dates to c. 1700 BC and represents one of the most ancient dry-stone defensive walls in southern Italy. Its rather complex outline (**Fig. 4**) testifies to the high capability of this community to organise an effective defence and at the same time indirectly indicates the high offensive potential of the neighbouring communities. This massive wall (5 m in width and possibly 5 m in height) protected the settlement on the side facing inland. It features at least one main gate flanked by twin towers and a series of narrow posterns arranged at close intervals, namely one every 12–13 m in the extensively unearthed portion of the wall. A couple of them have been found walled up on the exterior by a thin screen of stones, suggesting that the posterns might have been easily concealed from the outside, possibly for military purposes. The estimated overall length of the wall is approximately 360 m, of which 70 m (c. 20 %) have been extensively explored.¹⁶ The eastern part in particular lies under a subsequent defensive wall, but some portions of it have been brought to light, so providing a degree of evidence for 40 % of the entire first circuit. The opening of the main gate is 3.5 m in width, while that of the posterns is 0.80 m on the average (with a height of c. 1.2 m).¹⁷ The horseshoe-shaped towers flanking the gate protrude some 10 m from the external face of the wall and are provided each with an inner chamber that opens onto the entrance road.

¹⁶ Following a program of core-borings at the site, which have demonstrated that the Bronze Age settlement extended towards the lagoon more than previously thought, both the estimated length of the wall and size of the settlement have increased. The estimations that we present in this paper, including those regarding the demographic size of the population at Coppa Nevigata, are accordingly updated and slightly differ from those previously published. The resultant estimates for the labour/time involved in the construction of the walls have not, however, changed significantly.

¹⁷ Two posterns (F and G), located in the best preserved portion of the wall, still have the roofing, which consists of a series of slabs supported by the postern's walls and covered by the rubble filling of the wall.

Defensive walls featuring several posterns seem to occur but rarely in coeval southern Italian settlements. However, as mentioned above, in the vast majority of these sites only a limited portion of the defensive lines has been unearthed and, therefore, we know very little about their actual configuration. At present, the only Bronze Age defensive wall in the region provided with several posterns is that of the coastal settlement of Roca (phase 3)¹⁸ in southern Apulia, an example which is slightly younger than the one at Coppa Nevigata. The very well-preserved wall at Roca has been extensively explored and shows one architecturally complex main gate and five posterns over a length of 190 m. On the contrary, the defensive wall at the sub-coastal hilltop settlement of Masseria Chiancudda, whose earliest phase of construction possibly even slightly predates the Coppa Nevigata wall, appears to be architecturally simpler and less wide.¹⁹ It has been explored over a length of c. 70 m, but neither a gate nor any posterns have been detected.

Turning our attention back to Coppa Nevigata, by the 16th century BC the settlement appears to have expanded beyond the earliest wall, which in all likelihood was still standing.²⁰ However, owing to the later construction of a large ditch, it remains difficult to assess whether a further defensive line encircling the former one was built at that point, or whether these external structures were left undefended. Whatever the case, at the end of the 16th century BC the site suffered a severe attack, which resulted in the destruction of this settled area outside the earliest wall.²¹ Traces of what it is likely to have been an organised assault consist of noticeable burnt levels that extend across the entire extramural area excavated so far (**Fig. 4**; more than 100 m in length). These deposits have yielded a considerable number of flint arrowheads (some 50 or so), one of which was embedded in the wall, while the rest were scattered all across this area (**Fig. 5**). This pattern of distribution suggests that these are evidence for shot arrows rather than the products of a flint atelier located in this area.²²

¹⁸ Scarano 2012.

¹⁹ Cinquepalmi/Recchia 2009.

²⁰ Cazzella/Recchia 2012, 263–271.

²¹ Recchia 2010; in press.

²² This assemblage includes arrowheads of different types – barbed and tanged, tangless and with a small tang – and made of various qualities of flint. Archaeometrical analyses aimed at determining the source of

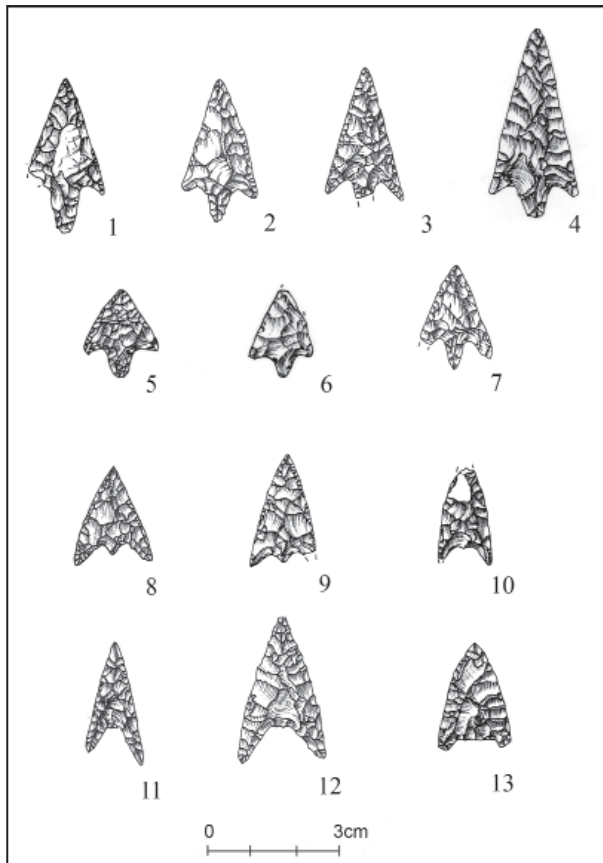


Fig. 5 Coppa Nevigata (northern Apulia). Flint arrowheads from the burnt deposits dating to late 16th century BC, possibly evidence for shot arrows: 1–7 barbed and tanged arrowheads; 8–10 arrowheads with a small tang; 11–13 tangless arrowheads (archive of the Coppa Nevigata Research Project; drawings by E. Santucci)

Warfare techniques

What can we learn from the Coppa Nevigata possible battlefield – and more in general from the earliest defensive lines in term of warfare techniques? It is clear that offensive strategies must have required a certain degree of coordination. The arrowheads found at Coppa Nevigata were scattered across the entire unearthed length of the wall; therefore, we may assume that the opponents doubtlessly numbered several dozens of individuals in order to cover such a span. In fact, it is unlikely that a few attacking archers would have been able to move fast along the entire perimeter of the wall, unless they were riding horses. Yet there is little archaeological evidence of a

provenance of the raw material are ongoing in collaboration with G. Eramo (University of Bari), I. Muntoni (Soprintendenza Archeologia Belle Arti e Paesaggio per le province di Foggia e Barletta-Andria-Trani), V. Mironi (PhD).

widespread use of horses in Middle Bronze Age southern Italy. Large volleys of arrows must have been employed particularly in the first stage of an assault, and they may have been combined with the throwing of burning projectiles. Battering rams, although of rudimentary kind, might well have been used at least to splinter the wooden gates. According to historic sources, the introduction of battering rams would have occurred after the Bronze Age. Yet, these sources may just refer to more perfected and complex types (i.e. shielded battering rams) that enabled longer-lasting assaults. Indeed, the focus of the defensive strategy at Coppa Nevigata in the first half of the 2nd millennium BC seems to be the gate, protected as it was by the jutting towers that formed a corridor of some 10 m in length. Assailants trying to get at the gate could have easily been shot at from the towers. This strategy was probably coupled with the military use of the posterns, which, as mentioned above, could have been concealed and thus allowed the defendants to stealthily exit the wall and take the assailants by surprise.

Rebuilding and transformations of the defensive lines (c. 1500–1300 BC)

Data about the defensive line of the 15th century BC at Coppa Nevigata are scanty. The earliest wall of the 17th century BC was partially dismantled and a very different kind of defensive line was built that ran parallel to the former one. This consisted of a string of wall segments of different lengths, leaving a series of wide openings between one segment and the next one.²³ How this system worked – assuming that this actually was a kind of defensive system – is very puzzling. What is interesting, however, is that in this period the area of the enclosures (including both the former and the new one) was given a particular symbolic meaning, as it was used for complex funerary practices.²⁴ This evidence does not have parallels in

²³ Unlike the most common Bronze Age walls in southern Italy that are filled up by stone rubble, these wall segments were filled by crushed yellow limestone, mixed with soil.

²⁴ These included both the formal burial of male individuals in the posterns of the earliest wall and the deliberate deposition of selected human bones in the filling of the new wall segments, besides complex practices entailing first the exposure of corpses and then the retrieval of skeletal parts (Recchia 2012).

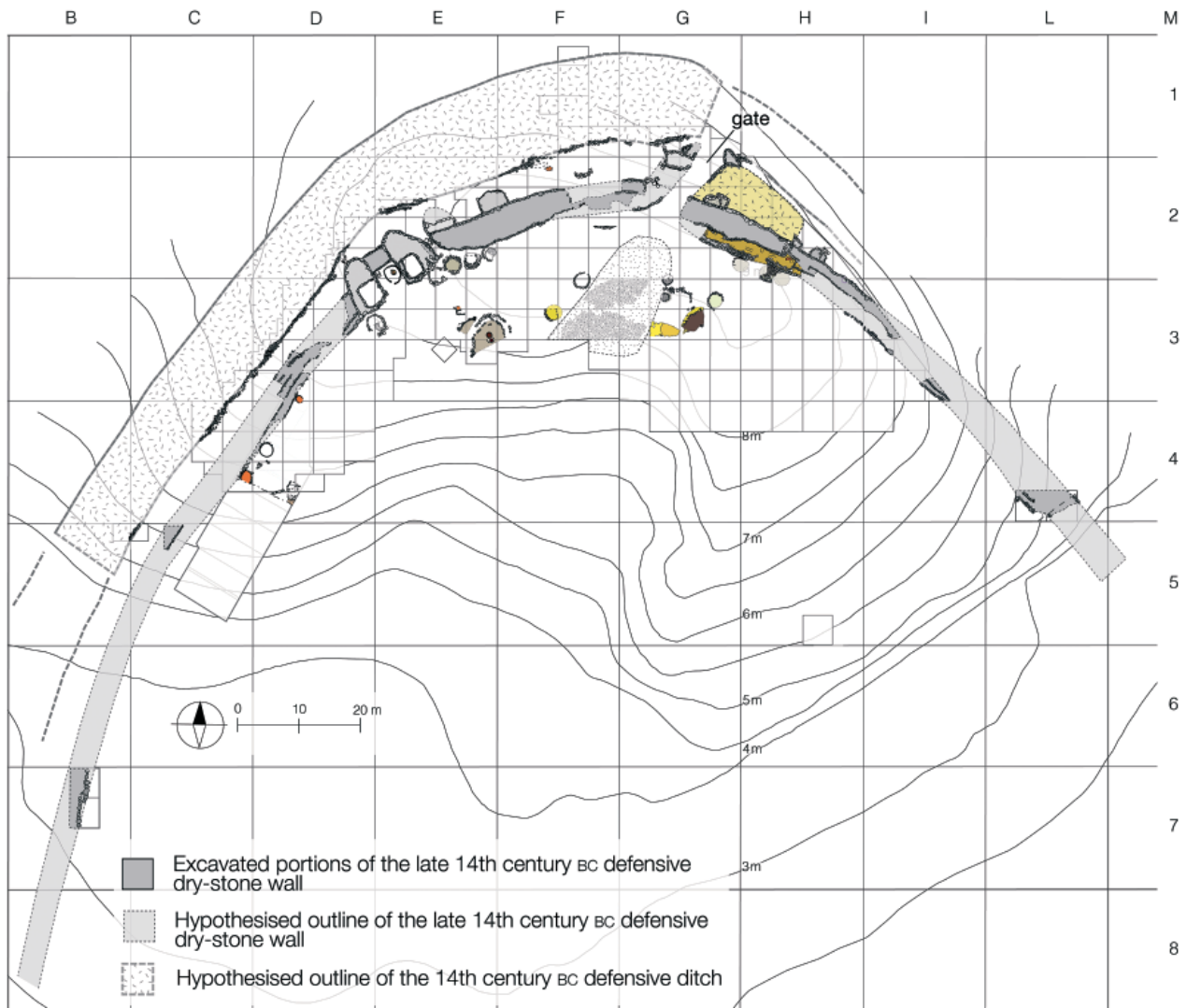


Fig. 6 Coppa Nevigata (northern Apulia). Map of the 14th century BC fortification lines (archive of the Coppa Nevigata Research Project; drawing and elaboration by G. Recchia)

coeval sites in southern Italy, although the practice of burying distinct individuals near or inside the enclosures is attested at Bronze Age fortified sites in north-eastern Italy and Istria, such as Sedegliano, Monkodonja and Vrčin.²⁵ Direct contacts between Istria and northern Apulia during the Bronze Age are suggested by shared stylistic pottery features,²⁶ and therefore it is possible that a link also existed in these socio-ideological practices.

Not until the early 14th century BC was a new massive dry-stone wall built at Coppa Nevigata. This partially incorporated the surviving remains

of the earliest one.²⁷ Up to 35 % (c. 140 m) of the entire estimated extent of the wall has been explored (**Fig. 6**). The former gate of the predating wall was closed, but the foreparts of the towers were maintained and reshaped, constituting now just modest jutting parts. The new gate, whose entrance was protected by two small horse-shoe-shaped towers, was placed to the east of the first. The contemporary wall featured at least two narrow posterns, which were both protected on the two sides by jutting extensions that made their access funnel-shaped. Unlike the posterns of the earliest wall, these two were consequently plainly visible from the outside, as were the posterns of the dry-stone wall at Roca (phase 2).²⁸ At Coppa Nevigata by the late 14th century BC, the posterns

²⁵ Cassola/Corazza 2009; Hänsel *et al.* 2015; Cupitò *et al.* 2018.

²⁶ Arena *et al.* 2018; Cazzella/Recchia 2018; Recchia *et al.* 2016.

²⁷ Cazzella/Recchia 2012, 280-287.

²⁸ Scarano 2012, 58-59.

appear to have been rendered unserviceable, while a wide ditch (12 m in width and 4 m in depth) was dug, running parallel to the wall. Furthermore, several modest projecting dry-stone towers were added at different points along the wall.

Changing warfare techniques?

One of the purposes of the ditch was possibly to weaken the impact of any initial volleys of arrows by increasing the distance between the assailants and the settlement itself. To reach targets standing on the wall, the arrows must have travelled more than 15 m, and more than 20 m to reach any dwellings inside the wall. The modest projecting towers along the wall were probably intended to provide a lateral defence (enfilading) against enemies climbing the wall. Their number suggests the need to protect the entire length of the wall. Thus, a crucial aspect of the battle could have been that of a direct assault upon the wall, probably now directed against a certain length of the wall rather than focussing on the gate(s). Maybe this is also why the use of posterns as sally ports had lost their effectiveness. The assailants possibly employed ladders to climb the wall. Notched log ladders are known from Middle Bronze Age sites not only in the British Isles,²⁹ but also in central Italy, such as the ladder in San Lorenzo a Greve (Fig. 7; mid-2nd millennium BC).³⁰ Archaeobotanical studies at Coppa Navigata show that different kinds of timber trees suitable for making into tall ladders grew in the surrounding environment of the site.³¹ Close-quarter combat, a pivotal and decisive moment in several types of fighting strategies, possibly took place on the top of the wall, as suggested by the archaeologically recorded assault that the settlement of Roca underwent around 1400 BC. Here, the skeleton of a male individual has been found in the area of the gate; this is interpreted as a warrior who fell from the top of the wall after being stabbed in the back.³²

The funerary ritual of the 15th–14th centuries BC in the area under scrutiny, consisting of collective burials both in hypogea and caves with rich

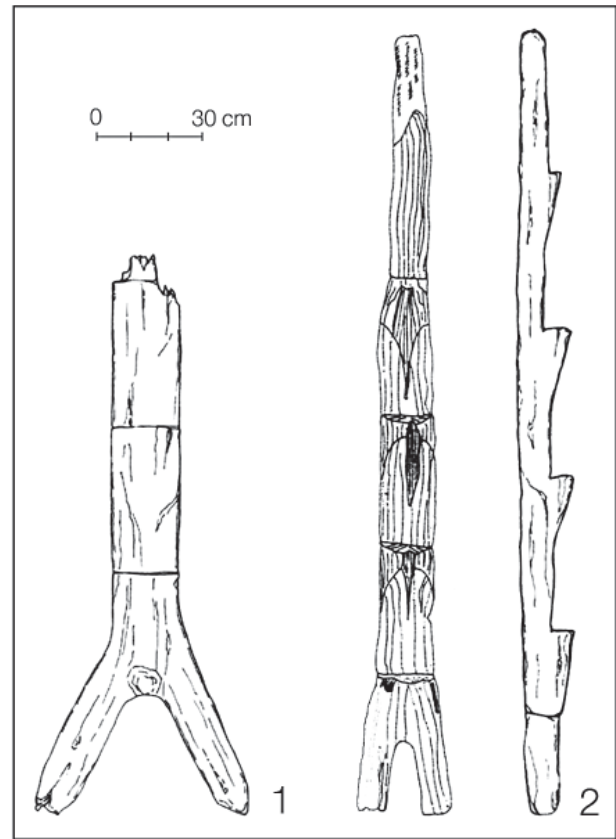


Fig. 7 Middle Bronze Age wooden ladders coming from S. Lorenzo a Greve (Tuscany) (after Aranguren/Perazzi 2007)

grave goods, provides us with a good picture of the bronze weaponry that was in use and on which ideological emphasis was placed (Fig. 8,1–6. 12–19).³³ This panoply mostly comprises daggers and short swords, while long swords are rarely attested in this period in entire southern Italy. Thus, it seems that weapons for close-quarter combat had gained prominence, exalting the bravery of single individuals. These individuals appear to have been fully integrated in kinship groups, but possibly distinguished themselves in battle or played the role of military chiefs. In any case, it is highly likely that all the adult males actively participated in the battles, owing to the still limited demography of these fortified centres. For instance, as we shall discuss below, we hypothesise that Coppa Navigata had a population of approximately 300 inhabitants, of which only 60–75 males were of any military value.³⁴

²⁹ Powell *et al.* 2015, 221 Fig. 8.5.

³⁰ Aranguren/Perazzi 2007 Fig. XX.

³¹ Fiorentino/D'Oronzo 2012.

³² Scarano 2012, 102–104.

³³ Recchia 2010; in press.

³⁴ Cazzella *et al.* in press, footn. 4.

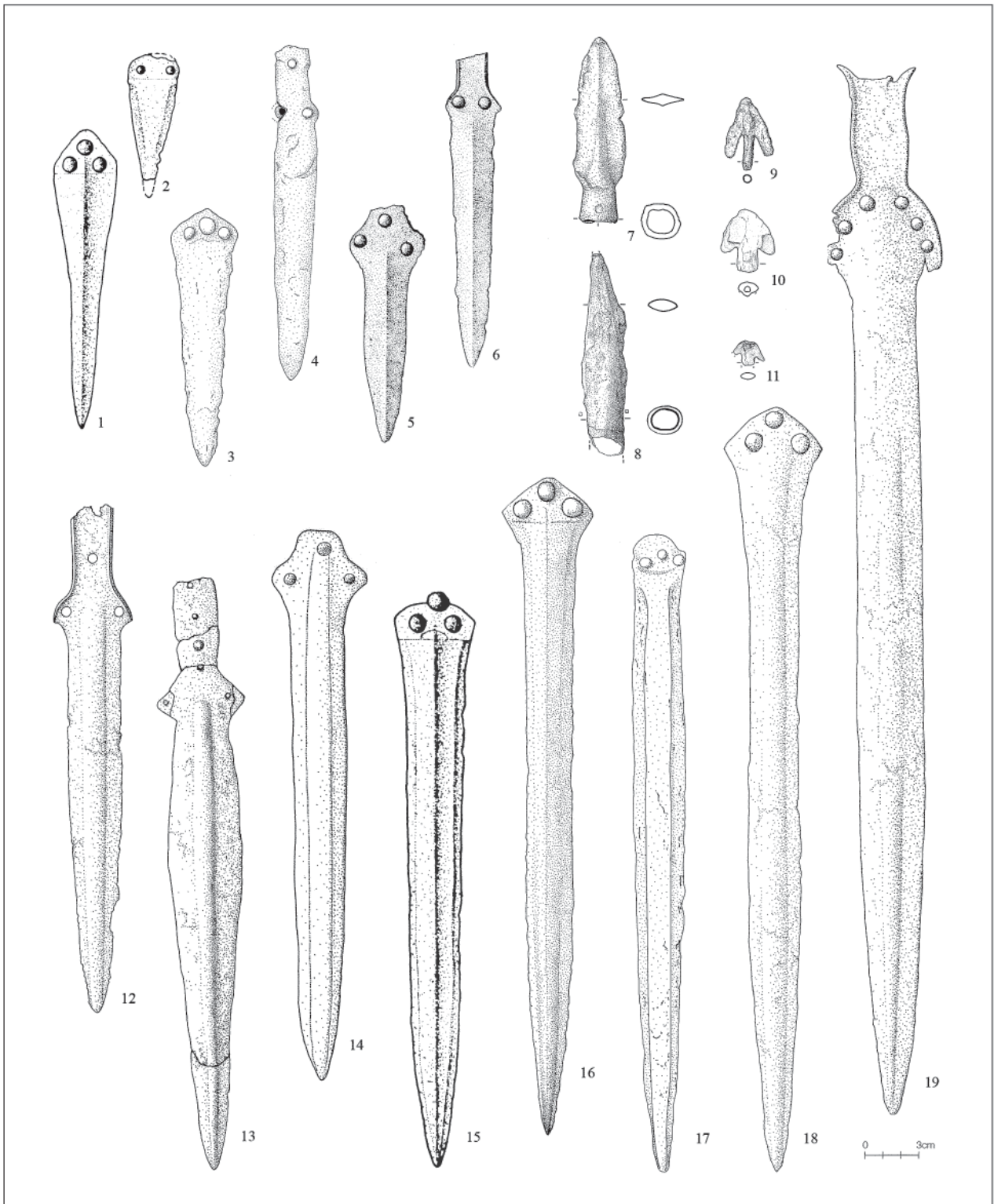


Fig. 8 Bronze weaponry from south-eastern Italy Bronze Age contexts: 1–6 daggers; 7–8 spearheads/javelins; 9–11 arrowheads; 12–19 swords (1–2, 15: from Toppo Daguzzo tomb 3 (Middle Bronze Age); 3–4, 14, 16–17: from funerary hypogea at Trinitapoli (Middle Bronze Age); 5–6, 12–13, 18–19: from Manaccora Cave funerary contexts (Middle Bronze Age); 7–11: from Coppa Nevigata (Late Bronze Age layers) (12–13, 18–19: after Bianco Peroni 1970; 5–6: after Bianco Peroni 1994; 1–2, 15: after Cipolloni Sampò 1986; 14: after Peroni *et al.* 2003; 7–9: after Recchia 2010; 3–4, 16–17: after Tunzi 1999; 10–11: authors' drawing)

New patterns of defence strategy at Coppa Nevigata in the Late Bronze Age – Early Iron Age (c. 1300–800 BC)

In the Late Bronze Age, the defence strategy at Coppa Nevigata appears to have changed once more. From the 13th century BC onwards, the massive defensive dry-stone wall of the previous century seems to have lost most of its functionality, while the large ditch remained in use.³⁵ The entrance gate (the settlement's only gate that we know of for these periods) was rebuilt just above the preceding one: now it consisted of a narrowing sloping walkway that led to a doorway located on the top of the 14th century BC wall's remains (at about 2 m above the ground surface outside the wall). It is probable that a new type of enclosure was built on the top of the wall's remains, as is also suggested by the pair of stone door sockets discovered at the sides of the doorway, meaning that the gate was inserted in a fence of some sort (either of wood and earth or of dry-stone).

Indeed, Coppa Nevigata in this period was prospering. The organisation of the settlement underwent major changes and specialised craft production increased, now encompassing metallurgy, the manufacture of antler and bone objects (possibly including ivory), the flourishing of a locally-based production of Aegean-Mycenaean type pottery and the differentiated management of primary resources. These pieces of evidence point to the emergence of an elite during this period, which was possibly responsible for the reshaping of the settlement's organisation.³⁶ Yet, it appears that only a minor amount of work and resources was devoted to the building of defensive lines at the site. May this evidence be related somehow to a transformation of warfare techniques?

Bronze spearheads (or javelins) become widespread in southern Italy, starting from the Late Bronze Age (Fig. 8,7–8),³⁷ possibly meaning that a transformation in the way of waging war was actually on the way and that now open field battles were more common. Besides that, a further complication is that of the rise of different social statuses among the warriors, i.e. a socially recognised difference between swordsmen and spearmen, with the former playing a prominent role. In south-eastern Italy the

evidence for long swords – perhaps related to socially differentiated individuals – during the Late Bronze Age is thin. It should be remembered, however, that in this period weapons are only rarely included among the grave goods. It could be that differentiated social roles have been finally established and that there was accordingly no further need to socially negotiate premiership through funerary display.³⁸ In northern Apulia, a long sword has been found, folded over, at the site of Molinella,³⁹ but whether it was a funerary gift or a ritual deposition is still unclear. From Coppa Nevigata (excavations of the early 1900s) comes the handle-grip of a probable long sword of Cetona type.⁴⁰

Finally, it is worth mentioning that an innovative type of defensive feature is attested at Coppa Nevigata in the Early Iron Age (8th century BC), the so-called *chevaux de Frise* (or 'dragon's teeth'), a kind of defensive line that was in use in several European settlements at that time.⁴¹ This defensive feature, which comprises a series of closely set, upright stones scattered in a clearing, was intended to hinder the enemy's approach, especially in the situations in which cavalry had become significant. While *chevaux de Frise* remain unrecognised in other south Italian contexts, they have been identified at some Istrian 'castellieri' (hillforts), such as Monkodonja, Vrčín, Gradac-Turan, Veliki Brijun,⁴² and probably date to the Middle/Late Bronze Age. Since there is good evidence that contacts between Coppa Nevigata and Istria continuously occur during the Bronze Age, the hypothesis that Istrian sites provided models of inspiration for Coppa Nevigata is tempting.

Models of inspiration for defensive lines in south-eastern Italy and parallels across the Adriatic

Models of inspiration

The architectural complexity of the earliest wall at Coppa Nevigata as well as of those at other sites, such as Roca,⁴³ raises the question as to whether

³⁵ Cazzella/Recchia 2012, 293.

³⁶ Cazzella/Recchia 2013b, 203–205; 2017, 470.

³⁷ Recchia 2010; in press.

³⁸ Bietti Sestieri 2010, 56–59.

³⁹ Nava 1981.

⁴⁰ Belardelli 2004 Fig. 34,9.

⁴¹ Cazzella/Recchia 2012, 313.

⁴² Mihovilić *et al.* 2013; Cupitò *et al.* 2018.

⁴³ Guglielmino/Pagliara 2017.

these defensive walls were inspired by coeval well-established prototypes. At present, the nearest region where complex fortification lines have an established tradition already by the Early Bronze Age is the Aegean. It is highly possible that in some Middle Helladic Aegean settlements, such as Kolonna on the island of Aegina⁴⁴ and Ayia Irini on Kea,⁴⁵ bulwarks featuring horseshoe-shaped towers of Early Helladic III tradition were in use at least until the end of the Middle Helladic. Did these fortifications represent a reference model for the central Mediterranean communities? On the one hand, no affinities in pottery production or pottery exchanges between the Aegean and south-eastern Italy have been found that might support this hypothesis. But, on the other hand, innovating processes such as the production of purple-dye and that of olive oil, both activities attested at Coppa Nevigata starting from the 18th century BC, may well testify some earlier interactions between Apulia and the Aegean regions before the Mycenaean connection. These early interactions might have conveyed the idea of erecting elaborate dry-stone defensive structures to southern Italy.⁴⁶

Parallels across the Adriatic

The karstic landscape of the western Balkans is strongly characterised by a large number of hillforts that were established in late Prehistory, whose nature and detailed chronology however remains to be understood in the vast majority of the cases. As mentioned above, northern Apulia in particular was closely involved in cultural interactions and exchanges with the opposite eastern Adriatic coast. Moreover, parallels can be drawn, especially between Coppa Nevigata and some hillforts in Istria, for some structural features of the fortification lines, such as the complex architecture of the gates, and peculiar funerary costumes emphasising the symbolic value of the defensive enclosures, such as the interment of distinct individuals in the enclosures.

A settlement pattern characterised by long-lasting hillforts enclosed by dry-stone walls (*castellieri*) appears to have been established in Istria in the Early Bronze Age. Among these hillforts, that of Monkodonja has been widely explored and ex-

tensively published.⁴⁷ The earliest defensive line at this site, belonging to the 19th–18th centuries BC, appears to be rather ancient, but is quite simple, without towers and architecturally elaborate entrance gates. It was only in phases 3 and 4, around the 16th century BC, that a high degree of complexity was attained,⁴⁸ thus after the emergence of complex fortifications in Apulia.

Aside from Istria, hillforts (*gradine*) in the western Balkans have been scarcely explored, and the outline and chronology of the defensive structures at these sites remains barely known. Therefore, it is difficult to recognise specific settlement patterns and to trace similarities and differences throughout time and across the Adriatic. Generally speaking these settlements occupy naturally defended hilltops, from the Croatian islands to the interior of Bosnia and Herzegovina (e.g. the hillforts of Nečajno and Sovići).⁴⁹ Hillforts appear to be densely distributed in the territory, as recent surveys and excavations have shown, but the problem remains as to whether these were in use simultaneously and/or may have different functions. In this respect, an interesting case study is that of the Lošinj Island in the Kvarner Gulf.⁵⁰

The notion that most of the Dalmatian hillforts date to the Late Bronze Age–Early Iron Age is likely biased. Early Bronze Age and Middle Bronze Age pottery occur in many of them⁵¹ and recent excavations, such as that at the Vrčevo–Gorica Hillfort near Zadar,⁵² are providing 14C dates substantiating the hypothesis that at least some of them were extensively occupied already in the Middle Bronze Age. In all likelihood also the hillforts in the Shkodra region,⁵³ such as Gajtan, were in fact established well before the Early Iron Age.⁵⁴

⁴⁴ Walter 2001; see Gauß in this volume.

⁴⁵ Davis 1986.

⁴⁶ Cazzella/Recchia 2013a.

⁴⁷ Hänsel *et al.* 2015; see Hänsel *et al.* in this volume.

⁴⁸ Hänsel *et al.* 2015, 155 Fig. 102. – Layers related to the earliest phase have provided a C14 date of 1910–1740 cal 94.5% BC (Kia 33502, 3495 +/-30 BP), while deposits related to an advanced building phase have given a C14 date of 1615–1491 cal. 90% BC (Kia 33497, 3265+/-30 BP) (Hänsel *et al.* 2015, 435–436).

⁴⁹ Čović 1989.

⁵⁰ Čučković 2017.

⁵¹ Mihovilić *et al.* 2013; Čučković 2017.

⁵² Čelhar 2012/2013.

⁵³ A recent overview in Shpuza 2014, although the author considers these settlements as pertaining to the Early Iron Age, but without offering a critical review of the chronological data.

⁵⁴ Govedarica 1989, 191; Gjyshia/Mara 2013.

The question remains, however, as to whether artificial defensive lines were built at these sites right from their early phases of occupation. Moreover, dry-stone structures (even in the same regional district) significantly vary in shape, size and possibly in function, ranging from defensive walls (that in many cases protected just the exposed parts of the hill), to cairns and to terraces.⁵⁵ It is possible, therefore, that the purpose itself of these sites might vary: the label ‘hillfort’ may not apply to all of them.

Thus, at present many questions remain open and in need of answers, but the advancement of research might rapidly change this picture. For instance, to what extent were the phenomena of the rise of hillforts/fortified settlements in the two Adriatic coasts linked? Did the western Balkans play a role in the process of cultural transmission westwards of complex defensive systems? Or rather, did southern Italian communities somehow convey elaborate architectural models to their north-eastern Adriatic counterparts?

Although the scarcity of data for the eastern Adriatic regions does not allow for a valid comparison, it would seem that the reasons and historic trajectories underlying the emergence of (naturally and artificially) fortified centres in the two Adriatic coasts differ. The array of hillforts/hilltop settlements located on the islands, sub-coastal and inland ridges of the western Balkans possibly indicates a response to the need for defence, triggered by conflicts between local communities. However, it must be taken into account that, apart from the settlements in the Dalmatian islands, coastal settlements in Dalmatia, Montenegro and northern Albania are virtually unknown, but may well have existed. Likewise in Apulia, Bronze Age coastal centres might lie under historical and modern cities occupying favourable locations. Moreover, marine transgression has probably affected a number of Bronze Age coastal settlements, as recent research in northern Dalmatia has been indicating.⁵⁶

Demography, work force and social organisation behind the building of defensive walls

As mentioned above, obtaining a figure for the demographic size of the communities inhabiting fortified settlements, even if in the nature of rough estimates, is useful to any detailed investigation of socio-political interactions on a regional scale as well as inside a given community. Assuming that the settlement fabric of fortified centres was relatively dense, a demographic index of 125 inhabitants per hectare is reasonable.⁵⁷ For instance, Coppa Nevigata was 2.5 ha in size and, therefore, the resulting demographic estimate is some 300 inhabitants, but both smaller (i.e. Scoglio del Tonno, despite its importance as a port of call for the Mycenaeans) and larger fortified centres (i.e. Chiancudda and Roca) did occur. In any case, no settlements would have reached a population of one thousand residents.

As regards the Coppa Nevigata settlement, we have tried to make an estimation of the labour involved in the construction of the 14th century BC defensive wall and the days of work this required (**Fig. 9**).⁵⁸ Assuming that most of the building material was previously amassed and ready for use,⁵⁹ and given a total of 60–75 adult males for carrying out the job, the building of the wall would have required approximately 100 work-days. Thus, it would have taken a certain effort for the community to build their defensive enclosure in a relatively short span of time (a couple of years?), but they could have done it without appealing to or demanding neighbouring communities for help. The digging of the ditch, undertaken at some time after the wall was built, would have involved a higher amount of work, requiring approximately 150 work-days, but again, it could have been done by the residents themselves in a few years. Thus, in our opinion the building of the defensive lines at Coppa Nevigata, as well as at other fortified settlements, is likely to have been the result of internal cooperation, without imposing the job on adjacent (subordinated) communities.

⁵⁵ Ocelić *et al.* 2014.

⁵⁶ Čelhar *et al.* 2017. – For instance, the recently excavated underwater settlement of Ričul, near Zadar, has given three ¹⁴C dates that fall between 1500–1300 cal BC (Čelhar *et al.* 2017 Fig. 6).

⁵⁷ Kramer 1982.

⁵⁸ The estimation proposed in Cazzella/Recchia 2013a has been updated, see also footn. 2.

⁵⁹ In any case women and children probably cooperated by carrying soil and small-size rubble-filling.

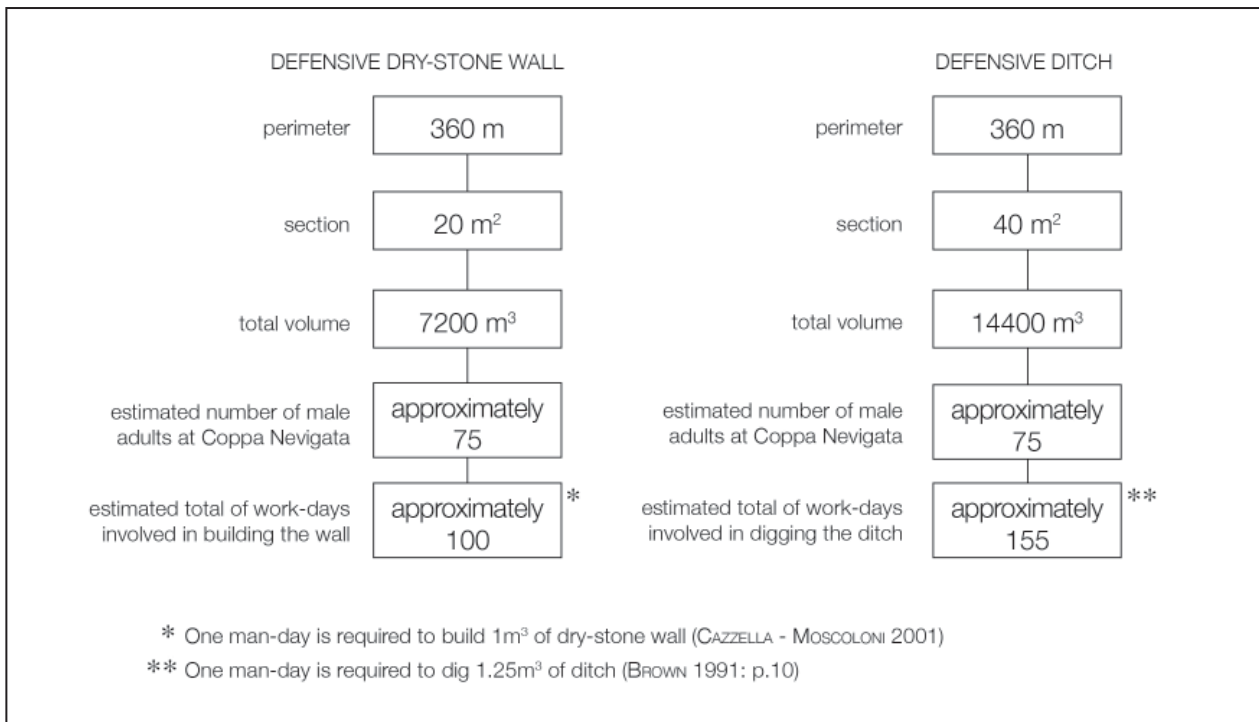


Fig. 9 Estimation of the amount of labour involved in building the defensive dry-stone wall and digging the defensive ditch at Coppa Nevigata (14th century BC) (graphics by G. Recchia).

Moreover, evidence suggests that no fixed elites or political inequality had been established at Coppa Nevigata by the mid-2nd millennium BC. The construction of the defensive lines might have been jointly coordinated by temporary leaders of the kinship groups that formed the Coppa Nevigata community, without a single central management. As regards both the 17th century BC wall and the 14th century BC one, some small structural differences have been noted between the various segments constituting the enclosure, as if these have been built following slightly different architectural approaches. This might well be the result of different teams, based on kinship relationships, working all at once in the building project.

Concluding remarks

The concept and physical archetype for elaborate defensive systems in Bronze Age southern Italy possibly had an external origin, perhaps coming from the Aegean, but it was then locally developed and adapted to specific warfare strategies and defence needs. At present data is lacking to compare settlement patterns across the Adriatic, but it would seem that the various regions, although involved in cross-cultural interrelations and ex-

change networks, were characterised by different settlement patterns, possibly stemming from local phenomena of socio-economic interactions.

Aside from their possible symbolic/ideological meaning, the practical defensive function of Bronze Age fortifications in southern Italy is undeniable. Competition and organised violence among local communities increased from the early 2nd millennium BC onwards, possibly owing to the functional divide between centres that specialised in exchange activities and those whose economy was hinged on traditional subsistence activities, which brought about a growing imbalance in the system of circulating goods. Long-lasting fortified centres emerged especially along the coasts and in key-spots controlling exchange routes, while a more mobile settlement pattern, in some cases consisting in small clusters of hamlets, characterised inland areas.

In southern Italy, organised combats and assaults against fortified centres were possibly conducted on the basis of temporary alliances among small hamlets, but it is highly unlikely that these communities, even the larger ones, had the political strength (or even the willingness) to both conduct long-lasting sieges and exercise political control over other communities or large territories. The same applies to the communities settling

in the fortified centres, which are likely to have numbered but a few hundred individuals at most, about a quarter being males able to engage in martial activities.

Although warfare patterns changed during the 2nd millennium BC, the scenario of competition among the fortified centres and between these and the (coalition of) small hamlets probably did not vary too much over the Bronze Age. It is possible that in time assaults coming from external ‘enemies’ added to this endemic belligerency, such as from eastern Mediterranean sailors⁶⁰ and perhaps even trans-Adriatic communities, with whom exchange might have sometimes given way to sporadic conflict. Not until the beginning of the Early Iron Age did communities of a larger demographic size and so larger military capability arise in southern Italy. At that point long-lasting but small settlements such as Coppa Navigata are likely to have either become satellites of larger centres or simply to have disappeared.

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