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From one side to another. An overview on trans-Adriatic connectivity during the Middle Bronze Age

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Abstract: Since the earliest systematic excavations in Bronze Age sites in northern Apulia in the 1930s, it has become clear that their archaeological record retained, among other things, a broad and variegated archive of Adriatic seaborne connectivity.
Thanks to the huge amount of data available at present from both the western and eastern coasts, it is possible to point out that, in the post-Cetina horizon, trans-Adriatic interactions increased noticeably from the 17th to the 14th century BC, in conjunction with the emergence of hillforts and fortified settlements in the Adriatic area. We will briefly analyse all data at our disposal for the reconstruction and interpretation of these four centuries in which trans-Adriatic journeys, transmission of models, trade, exchange, exogamic practices etc. contributed in shaping the worldview of the communities living along its coasts.

Keywords: central Adriatic area, Middle Bronze Age, interactions, hillforts

Introduction

The European Bronze Age (2200–800 BC) represents a period of unprecedented connectivity, both land-based and seaborne.[1]

The aim of this paper is to provide a concise but comprehensive overview on travels, transmissions and transformations that took place in the central Adriatic area during the Middle Bronze Age (ca. 1700/1650–1325/1300 BC) and contributed in shaping the worldview of the communities living along its coasts.

Geographical peculiarities together with an outstanding archaeological record make this region and this time-frame an ideal laboratory for exploring connectivity between distant communities in a phase of great transformations, during which the landscape and social relationships underwent significant changes.

The large and variegated spectrum of archaeological data available at present from northern Apulia to the west and Central Dalmatia to the east provides us with an invaluable archive for aiming at a well-rounded reconstruction of interaction dynamics. Through the integration of all data at our disposal, we will try to shorten the distance between our proxies and the prehistoric phenomena underlying them as much as possible.

It is well-known that Adriatic seafaring is far from being a Bronze Age phenomenon.

Beyond scarce and uncertain evidence of Palaeolithic and Mesolithic contacts that were for sure primarily land-based,[2] the distribution of impressed ware on both Adriatic coasts[3] proves Early Neolithic seaborne connectivity and is intertwined with the transition to farming in the Adriatic area.[4] The obsidian from Lipari, attested in both Istria and Dalmatia, represents another relevant proxy for the Neolithic interaction phase.[5]

[1] Kristiansen / Larsson 2005; Vandkilde 2016.

[2] Forenbaher 2019, 26-32.

[3] Müller 1994; Forenbaher / Kaiser 2011; Forenbaher 2019, 33-35.

[4] Forenbaher / Miracle 2014; Forenbaher 2019.

[5] Tykot 2014; Tykot 2017. Taking into account prevailing winds and currents, the position of islands being fundamental for rest stops during navigation, as well as the location of Neolithic sites where Liparian obsidian has been recovered, Helen Farr suggests two possible routes for crossing the Adriatic: 1. Termoli, Tremiti Islands, Palagruža, Biševo, Vis, Drvenik Mali; 2. Gargano, Palagruža, Sušac, Korčula, Šćedro, Hvar; Farr 2006, Fig. 4.

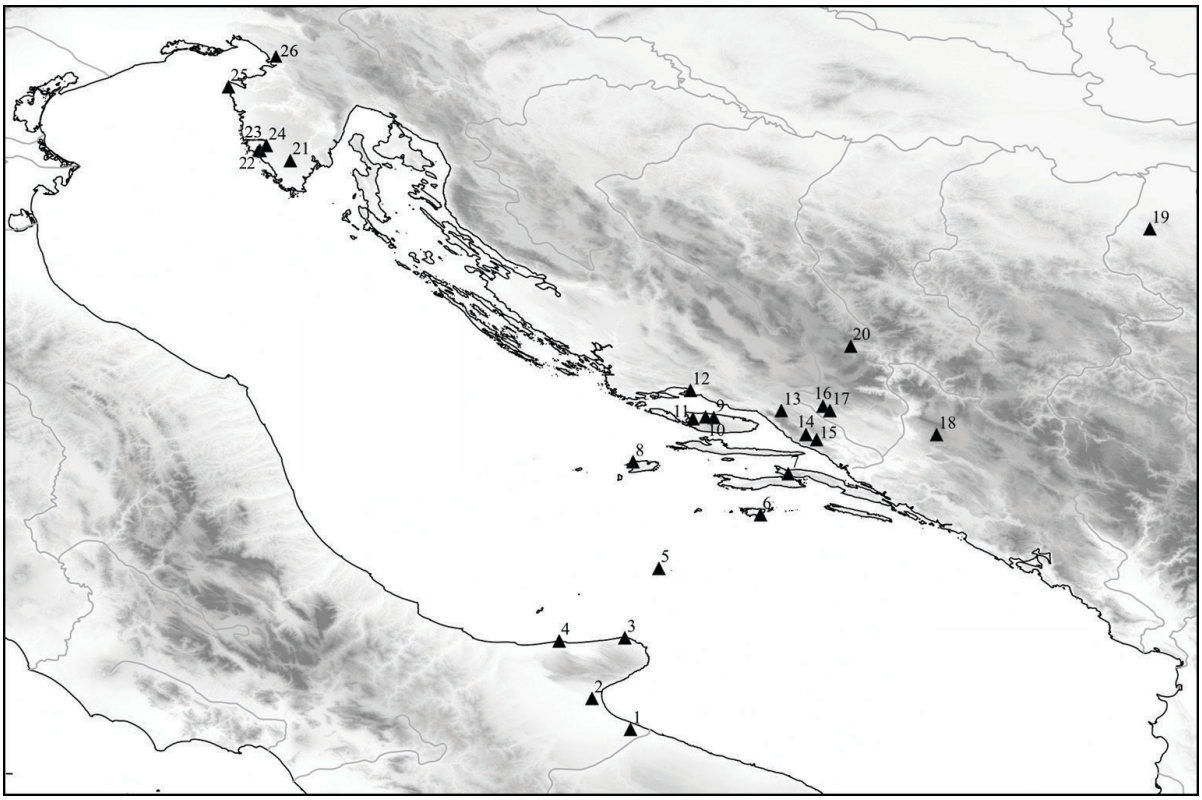

Figure 1. *Sites cited in the text. 1. Trinitapoli; 2. Coppa Nevigata; 3. Manaccora; 4. Torre Mileto; 5. Palagruža; 6. Rača Špilja; 7. Nakovana; 8. Krajicina Špilja; 9. Škrip; 10. Kopačina Špilja; 11. Rat; 12. Vranjic; 13. Jukić; 14. Begovići; 15. Majići; 16. Nečajno; 17. Sovići; 18. Rabina; 19. Joševa; 20. Varvara; 21. Vrčin; 22. Mušego; 23. Monkodonja; 24. Žamnjak; 25. Zambratija; 26. Elleri.*

Moreover, from at least the Neolithic onwards, most chert recovered in different Dalmatian sites was probably imported from the Gargano, to our knowledge the region with the highest quality chert within the Adriatic-Balkan-Carpathian district. It is very likely that most prismatic blades arrived in Dalmatia as finished products and it must be noted that such a foreign material was also used for more simple expedient tools.[6]

The continued presence from the Neolithic onwards (at least until the Late Bronze Age)[7] of Gargano chert in Dalmatian sites gives us the clue that trans-Adriatic contacts never ceased altogether and that the sea-corridor linking the Italian and the Balkan Peninsulas has always been (more or less) active, even during those periods for which other proxies for interaction – e.g. ceramics – are scarce or completely lacking, e.g. during the late Copper Age eastern Adriatic Ljubljana Culture.

Even if no vessel bearing typical Ljubljana features has been recovered along the western Adriatic coast so far, the fact that Gargano chert is attested in contexts of the Pelješac Peninsula with Ljubljana potsherds[8] and that at Palagruža – a tiny island located at the centre of the Adriatic basin between northern Apulia and Central Dalmatia – a good amount of archaeological evidence dates to this period,[9] demonstrates that trans-Adriatic navigation did not cease.

The limitation of resources on Palagruža, both in terms of soil and water, makes this place unsuitable for stable settlement.[10] In line with this, prehistoric finds recovered on the island have been interpreted as the result of overnight stopovers during navigation and – mostly for what concerns the 3rd and early 2nd millennium BC Ljubljana and Cetina finds – as the result of ritual activities linked to Adriatic seafaring. Most pottery fragments are in fact referable to fine

[6] Forenbaher / Perhoč 2015; Perhoč 2018; Forenbaher 2018, 117-119; Forenbaher 2019, 36-37.
[7] Forenbaher / Perhoč 2015, 65.
[8] Spila Nakovana, Phase 5; Forenbaher / Perhoč 2015, Tab. 5.
[9] Forenbaher 2018, 22-34.
[10] Ibid., 106.

decorated vessels, while coarse ware is almost absent. Along with pottery, lithic artefacts, arrowheads, wristguards, and pendants also seem to have been deliberately selected.

Following this interpretation, Palagruža would have functioned as a sort of "maritime sanctuary" *ante litteram*.[11] This hypothesis appears to be extremely convincing, if we take into account that, during the Classical and Hellenistic Greek periods, the island hosted a sanctuary, very likely dedicated to Diomedes.[12]

As outlined above, the island would have had an outstanding role in the frame of trans-Adriatic seafaring not only during the Ljubljana phase, but also during the following Cetina period, when artefact distribution appear to be more meaningful and Cetina-like pots and decorations – or those closely comparable to them – have been recovered even far away from the Central Dalmatian core area. In this period, trans-Adriatic contacts are in fact embedded within a wider, macro-scale interaction scenario, i.e. the so-called "Cetina phenomenon", also involving Bosnia and Herzegovina, Serbia, Albania, Montenegro, the Peloponnese, Campania and possibly also eastern Sicily, the Aeolian and the Maltese Islands alongside Central Dalmatia and Apulia.[13]

What happens in the subsequent phase? Did Palagruža keep its crucial role? How have the interaction dynamics changed in the post-Cetina horizon?

Defining space and time

The aim of this paper is to analyse trans-Adriatic interactions during the late Early and Middle Bronze Age, i.e. in the period following the "Cetina phenomenon".

From the earliest investigations in the 1930s at Grotta Manaccora,[14] a cave located in northern Apulia in a bay on the coast of Mount Gargano, it became clear that, during the Bronze Age, strong connections linked the Italian and Balkan Peninsulas. Elise Baumgärtel, at that time leading the excavations at the site, noticed that the pottery production from Manaccora – or at least a portion of it – was comparable with vessels belonging to the Bosnian Glasinac Culture. Shapes recovered in the two districts, far away from each other, appeared to her to be *identical as if they had been made by the same hands.*[15] Even if today, thanks to a constantly increasing number of investigations in Central Dalmatia,[16] we have at our disposal significantly more proximal sites for comparison, we can state that this intuitive scholar effectively introduced this line of thought considering the opposing sides, separated by a stretch of sea, in a tight dialectic.

From that moment onwards – and especially from the 1980s – the topic of trans-Adriatic interactions in the post-Cetina horizon was treated on several occasions by different authors, who compared a selection of ceramics and metal productions from the two coasts. Referring to the late Early and Middle Bronze Age, some authors stressed connections between Central Dalmatia and Herzegovina and northern Apulia,[17] while some others suggested closer connections between northern Apulia and the Istrian Castellieri Culture.[18] The latest research on the topic, based on a systematic survey of pottery types from the three areas (1. northern Apulia; 2. Dalmatia/Herzegovina; 3. Istria/*Caput Adriae*), demonstrated that, even though all three geographical districts were connected, most interactions seem to have occurred between northern Apulia and Central Dalmatia, above all with Central Dalmatian island and coastal sites, where the presence of both Italian and Istrian-like models revealed their crucial role within inter- and trans-Adriatic interaction networks.[19]

It is essential to set the clearest chronological frame as possible for the phase in which trans-Adriatic interactions increased and remained stable – with minor fluctuations – for at least four centuries, in the period following the Cetina phenomenon (Early Bronze Age 1) and preceding the Late Bronze Age interaction

[11] Forenbaher 2018, 147-148.
[12] Kirigin / Čače 1998; Kirigin et al. 2010; Kirigin 2012; Miše et al. 2018.
[13] Maran 2007; Gori et al. 2018; Cazzella et al. 2020 with former references.
[14] Rellini et al. 1931; 1934; Baumgärtel 1951; 1953; Recchia 1993; 1995.
[15] Baumgärtel 1934, 227; Arena et al. 2020a, 246.
[16] Arena et al. 2020a.
[17] Čović 1980; Govedarica 1991–1992.
[18] Peroni 1984; 1989; Cazzella / Moscoloni 1995; Cazzella / Recchia 2005; 2018.
[19] Arena 2018; Arena et al. 2018; 2020a; 2020b.

phase,[20] which occurs with different dynamics that are, at least in the case of northern Apulia and Central Dalmatia, at present, not so easily detectable.[21]

Comparing radiocarbon dates[22] from different sites, namely the youngest dates related to Cetina contexts[23] and the oldest dates related to Dinara/Posušje[24] contexts, we can suggest a transition phase between the two cycles/phenomena/cultures around 1900/1850.[25]

Outstanding evidence of trans-Adriatic interactions, strongly linking the western and eastern coasts, are to be dated slightly later, in the period between the 17th and the 14th centuries BC.

This timeframe of unprecedented connectivity has been mostly defined thanks to archaeological evidence from three sites located in northern Apulia (Manaccora, Coppa Nevigata, Trinitapoli) and three sites located in Central Dalmatia (Rat and Škrip on Island Brač and Vranjic in the Gulf of Kaštela).

Manaccora is a cave facing the sea along the coast of Mount Gargano. We can consider it one of the key-sites for reconstructing and interpreting trans-Adriatic contacts in the Middle Bronze Age. Even if the cave had been occasionally frequented before this phase and also retained traces dated to the Late Bronze and Early Iron Ages, most evidence of interaction with the communities from the opposing coast have been recovered in areas of the cave used for ritual activities between the 17th and 16th centuries BC and for hosting burials between the 15th and the 14th centuries BC.[26] A similar situation applies at Trinitapoli, a site where 15 ritual and/or burial hypogea have been recovered. Here, like at Manaccora, ritual phases predate the burial phases.[27] Coppa Nevigata is a fortified settlement in the southern Tavoliere region;[28] the occupation of the site spans from the 18th century BC to the Early Iron Age, but most evidence of interaction with the eastern Adriatic coast is seen in the period between the 17th and 14th centuries BC. On the Dalmatian side, most evidence of interactions with the Italian Peninsula, and with northern Apulia in particular, derive from three sites where outstanding Bronze Age stratigraphies were preserved. Rat[29] is a hillfort located on the western coast of Island Brač; at this site, a sequence beginning in the 17th century BC has been excavated. A possible earlier beginning for the occupation cycle at the site is suggested by the fact that the excavation has not yet reached the bedrock. Škrip[30] is another hillfort located on Island Brač, its occupation begins in the 17th century BC, similar to Rat.

Vranjic[31] is a settlement located on a small peninsula in the Gulf of Kaštela; underwater excavations brought to light a sequence spanning from at least the 17th century BC to the Middle Ages.

The chronological framework for these sites has been obtained through radiocarbon dating and cross-references between pottery types.[32] (Fig. 2).

Archaeological evidence for interaction dynamics during the Middle Bronze Age

From the very dawn of the research on trans-Adriatic interactions, scholars compared a portion of pottery types recovered in northern Apulia with pottery types recovered in Istria, in Dalmatia, and in Herzegovina. If we focus our

[20] Iacono 2019.

[21] Arena et al. 2018.

[22] All radiocarbon dates have been calibrated applying the IntCal20 calibration curve; Reimer et al. 2020.

[23] Begovići, Beta 248564 – on human tooth: 3670 ± 40 BP, 2135–1977 cal 1σ BC, 2196–1937 cal 2σ BC (Beg Jerončić 2011); Jukić, mound 1-grave 3, Beta 241024 – on charcoal: 3590 ± 40 BP, 2016–1891 cal 1σ BC, 2121–1777 cal 2σ BC (Olujić 2012).

[24] Rat SU 37, Beta 406899 – bone sample: 3380 ± 30 BP, 1733–1623 cal 1σ BC, 1747–1544 cal 2σ BC (Arena 2018) and Majići, mound 1, Beta 239495 – bone sample: 3530 ± 40 BP, 1927–1774 cal 1σ BC, 2008–1744 cal 2σ BC (Mucić / Kovačević Bokarica 2011, 154, footnote 82). Whereas the radiocarbon date from Rat and the attribution of the decorated finds from SU 37 to the typically Dinara 1 incised motifs can be entirely accepted, this is not the case for the date from Majići, which needs to be prudently taken into account, as the decorated sherds are only described in the text, neither drawings nor photographs are provided.

[25] Arena 2018; Forenbaher 2018, 141.

[26] Baumgärtel 1953; Recchia 1993; 1995; Arena 2012/2013; 2018; Tunzi et al. 2018.

[27] Tunzi Sisto 1999a; 2005; Peroni et al. 2003.

[28] Cassano et al. 1987; Cazzella et al. 2012 (with a complete bibliography on the site).

[29] Protić 1988; Barbarić 2010; Sanford Gaastra et al. 2014; Arena 2018.

[30] Gaffney et al. 2001; Arena 2018.

[31] Radić Rossi 2006; 2007; 2008a; 2008b, 2011; Vodička Miholjek 2008; Skelac / Vodička 2009; Arena et al. 2020b.

[32] Arena 2018, results are foreseen to be soon published as a monograph.

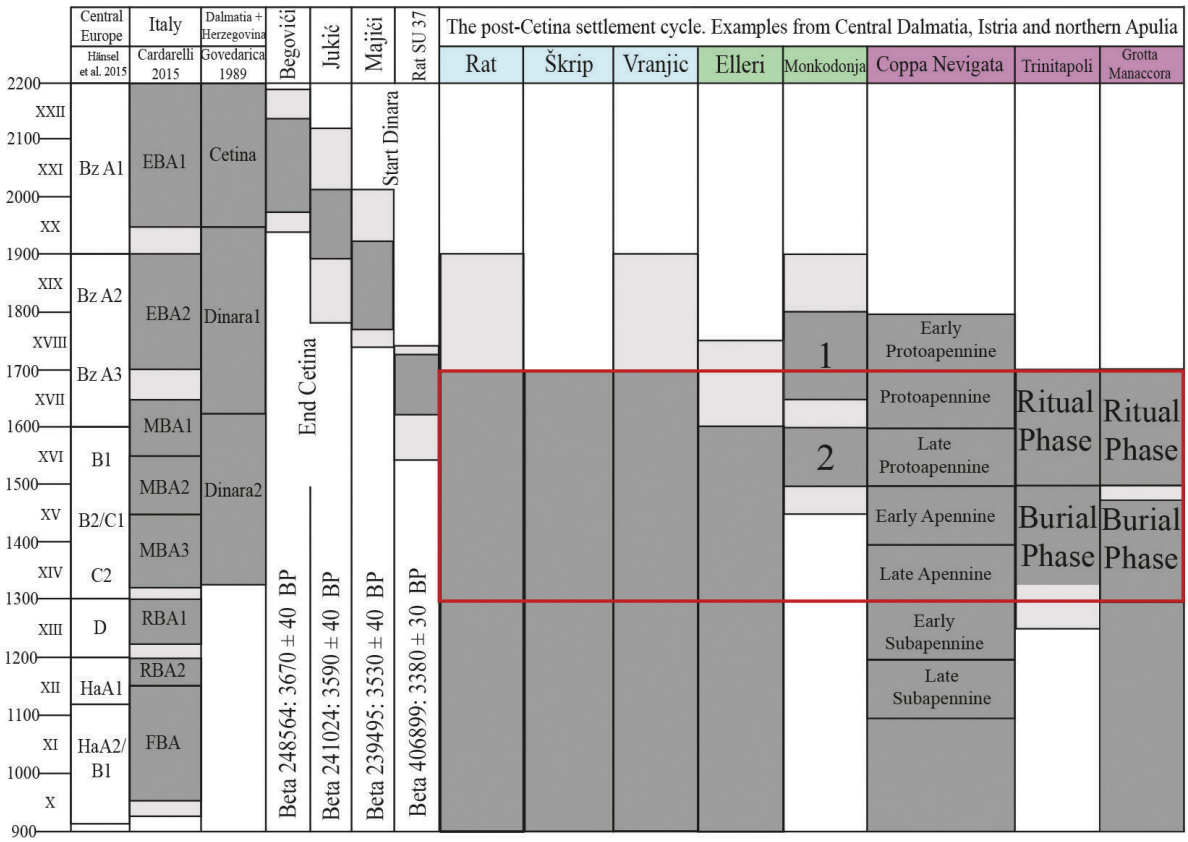

Figure 2. *Chronology of the main contexts mentioned in the text. The red rectangle indicates the phase during which major interactions occurred. EBA = Early Bronze Age; MBA = Middle Bronze Age; RBA = Recent Bronze Age; FBA = Final Bronze Age.*

attention on the central part of the Adriatic basin, until very recently, the sites in the Balkan Peninsula available for comparison were rather far from the coast, beyond the orographic barrier of the coastal range of the Dinaric Alps (e.g. hillforts Nečajno, Sovići, Varvara). Recent excavations at Central Dalmatian coastal and island sites – above all at Rat and Škrip on Island Brač and at Vranjic in the Gulf of Kaštela – finally allowed us to reconsider this scenario and to pay due attention to a district that, for its geographical location, represents a hub of inter- and trans-Adriatic networks.[33] Investigations at these sites, together with the systematic study of the pottery assemblages, has opened – and still opens – new perspectives on the topic.

The two-fold nature of pottery assemblages from Middle Bronze Age contexts in northern Apulia, with some vessels referable to local Protoapennine and Apennine models and some others to trans-Adriatic (mostly Dinara) models, is unquestionable, and has been recalled more than once in research history.

Compared with the first studies on trans-Adriatic contacts, thanks to new excavations and data publication, we are now able to move a step forward from a more qualitative analysis to an attempt at a quantitative one. Exclusively taking into account clearly recognizable shapes that can either be attributed to local Protoapennine and Apennine models, or, on the contrary, to foreign ones (trans-Adriatic, mainly Dinara), we attempted to quantify the two (opposing) groups of shapes at different sites in northern Apulia (Grotta Manaccora, Trinitapoli, Torre Mileto, Coppa Nevigata).[34] (Fig. 3).

Dinara models are widely attested in all excavated northern Apulian sites, and in sites such as

[33] Arena et al. 2020a; 2020b.

[34] For Torre Mileto, quantification has been based on Gravina 1995. For Grotta Manaccora on Baumgärtel 1953; Recchia 1993; 1995; Arena 2012/2013; Tunzi et al. 2018. For Coppa Nevigata on Cassano et al. 1987; Cazzella et al. 2012. For Trinitapoli on Cataldo 1999.

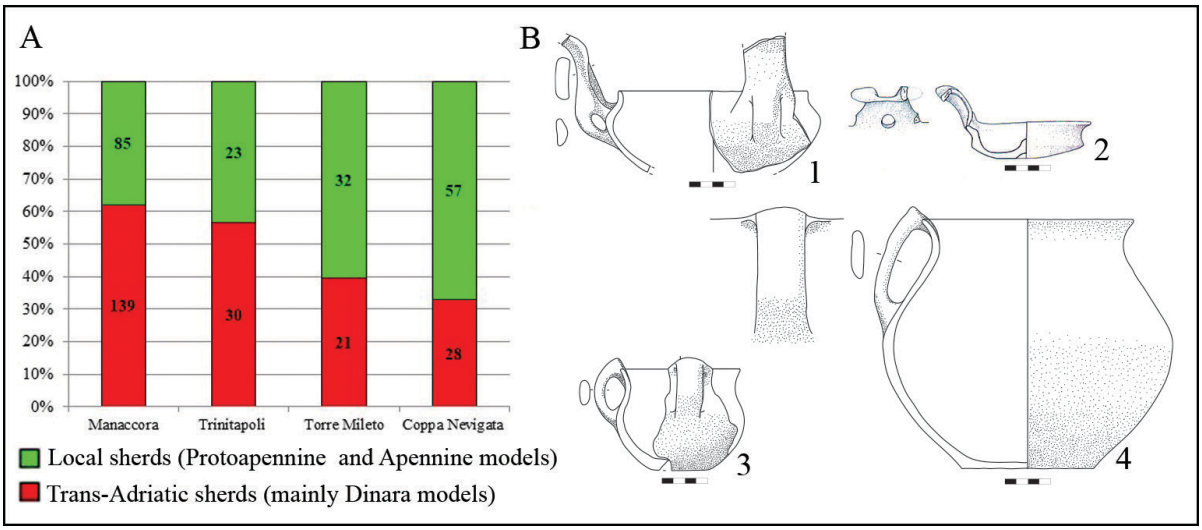

Figure 3. *A. Numbers and percentages of sherds/vessels referable to local (Protoapennine and Apennine) models and to foreign trans-Adriatic (mainly Dinara) models at Manaccora, Trinitapoli, Torre Mileto, Coppa Nevigata. B. 1–2. Examples of typical Protoapennine (1) and Apennine (2) cups. 3–4. Examples of typical Dinara cups and tankards. 1. 3. 4 (after Tunzi et al. 2018, Fig. 2. 12, 4. 2, 5. 6); 2 (after Cataldo 1999, Tab. V. 89).*

Grotta Manaccora and Trinitapoli, they represent more than the 50% of all pottery assemblages.

It cannot be considered accidental that trans-Adriatic models appear in higher percentages in ritual and/or burial contexts (Grotta Manaccora and Trinitapoli), where self-representation practices are more tangible, rather than in settlements (Torre Mileto and Coppa Nevigata), where functional aspects tend to prevail.

It is clear that a flow of models from eastern Adriatic sites to the western ones occurred. Two questions arise spontaneously: 1. Did a reverse flow exist? Were western models transmitted to the eastern coast? 2. Were foreign-looking models (recovered in northern Apulia or in Central Dalmatia) local productions or imports?

1. Whereas a huge amount of trans-Adriatic (mainly Dinara) models has been recovered in northern Apulia, in Central Dalmatia we can only count a total amount of 9 sherds referable to Italian Protoapennine and Apennine models. They have been mostly recovered on island Brač (at hillforts Rat, Škrip and Kopačina Cave) and at Vranjic.[35]

2. Thanks to petrographic, mineralogical and chemical analysis on samples from Grotta Manaccora, Rat and Vranjic, we can now affirm that the vast majority of Dalmatian models recovered in the cave are locally produced rather than imported,[36] and that a similar pattern can be observed among ceramic assemblages recovered at Coppa Nevigata.[37] Even if archaeometric analyses have not been performed on vessels from the two hypogea at Trinitapoli (Ipogeo dei Bronzi and Ipogeo degli Avori), where a large number of Dalmatian models has been recovered, we could hypothesise that they were locally produced, not only applying by extension what has been observed at Manaccora and at Coppa Nevigata. We will see more in detail below that a strong female component from Dalmatia may have resided at Trinitapoli. If we accept the idea of pottery production being mainly a female activity, we may at least suggest that the miniaturized Dinara-like vessels recovered at Trinitapoli, which seem to have been specifically produced for funerary purposes,[38] were made locally by Dalmatian women. It is worth highlighting that at Trinitapoli we find the unique hybridizations

[35] Arena et al. 2020a; 2020b.

[36] Archaeometric (petrographic, mineralogical, chemical) analyses on 92 ceramic samples from Grotta Manaccora, Rat and Vranjic have been carried out at the University of Bari – Dipartimento di Scienze della Terra (Dr. Giacomo Eramo). The publication of the above-mentioned archaeometric results is in preparation (Arena et al. in prep).

[37] Petrographic groups and chemical values of 200 samples from Coppa Nevigata have been published in Levi et al. 1995; through a systematic comparison between values from Coppa Nevigata, Grotta Manaccora, Rat and Vranjic (note 36), we can suggest that a similar trend occurs in both sites, with most of Dalmatian models being locally produced.

[38] Arena et al. 2020a, Fig. 6; 2020b, Fig. 5.

between eastern models (a Dinara handle with tongue-shaped termination and an Istrian handle with a triangular front) and local Apennine-like decorations (Fig. 5. A).

In Central Dalmatia we can observe an opposing scenario. Italian Protoapennine and Apennine-like vessels are very few,[39] and virtually all of them have been imported, probably from northern Apulia.

Almost every Dalmatian model recovered in northern Apulia and every Protoapennine and Apennine import recovered in Central Dalmatia belongs to finely polished and in some cases also decorated[40] table-ware. This evidence should not mislead us towards an interpretation of trans-Adriatic interaction in the Middle Bronze Age focussed on the ritual sphere. Certainly, cults, self-representation practices, and gift giving among élites from the two coasts played a fundamental role, but we should not forget to consider other evidence that is far more difficult to track down and more linked to economic domain. Looking at works aimed at the definition of archaeological cultures and their respective distinctive artefacts, we usually find more "typical" cups, tankards, pitchers than "typical" jars or storage vessels. This is mostly due to the wider variability – from a formal, geographical and diachronic point of view – of the former class of pots, some of which are also richly decorated, whereas the latter is more homogenous. Moreover, in the case of jars and storage and transport vessels, fragmentation makes even more difficult to identify typical features.

We can easily imagine that trading goods along and across the basin was at least one of the reasons contributing to maritime interaction. A trace of such an activity may be envisaged by the distribution of a very recognizable type of huge transport jar, attested at Monkodonja in Istria, at Krajicina Špilja on Island Vis in Central Dalmatia and at Coppa Nevigata in northern Apulia. This distribution pattern, which links the three main nodes of the inter- and trans-Adriatic network, may reveal a trade/exchange system in which Central Dalmatia plays an intermediary role between northern Apulia and Istria (Fig. 5. B).

If generally closed shapes are difficult to track down, this is not the case for a specific type bearing both a very peculiar shape and very peculiar attributes, the so-called "butter-vessel".

Until recently, this kind of shape had been identified in the Adriatic area exclusively on the basis of oval bottoms with inner bulges recovered at different sites, whereas some better preserved examples came from the Danube-Carpathian area.[41]

This picture can now be doubly integrated. On the one hand, the study of some unpublished pottery assemblages from Dalmatia and northern Apulia enabled identification of more fragments attributable to this shape. On the other, extraordinarily well-preserved vessels have been recovered at both hillforts Rat and Škrip on Island Brač, allowing us to appreciate the overall shape and attributes of these kinds of vessels. Beyond the oval bottom (with inner bulges), the overall shape is compressed, thus being functional for a pendular movement suitable for butter preparation, with the vessels hanging with ropes looped inside doubled pierced handles; necks are very narrow (Fig. 4).

If the interpretation of such shapes as "butter-vessels" is correct, their distribution reveals that, in Istria/*Caput Adriae*, Central Dalmatia and northern Apulia, common techniques linked to food preparation were put into practice. Most of these shapes have been recovered in mixed or surface contexts; the "butter vessel" from hillfort Rat represents an exception as it was found *in situ* within a stratigraphic unit that has been C14 dated (3070±40, 1398–1284 cal 1σ BC, 1423–1223 cal 2σ BC).[42] It is possible that these kinds of vessels are to be dated not exclusively to the Middle Bronze Age, but at least also to the beginning of the Recent Bronze Age.

Beyond ceramics, other classes of artefacts are also worth considering, even if in most cases their traces are feeble.

Due to the large quantity of amber recovered in northern Apulia, at Trinitapoli in particular, it has been argued that, during the Middle Bronze Age, this district functioned as hub for redistributing this commodity, both within regional networks and within wider networks involving

[39] Arena et al. 2020a, Fig. 2.

[40] With typical Apennine decorations.

[41] Hellmuth 2014.

[42] Barbarić 2011a; Arena 2018.

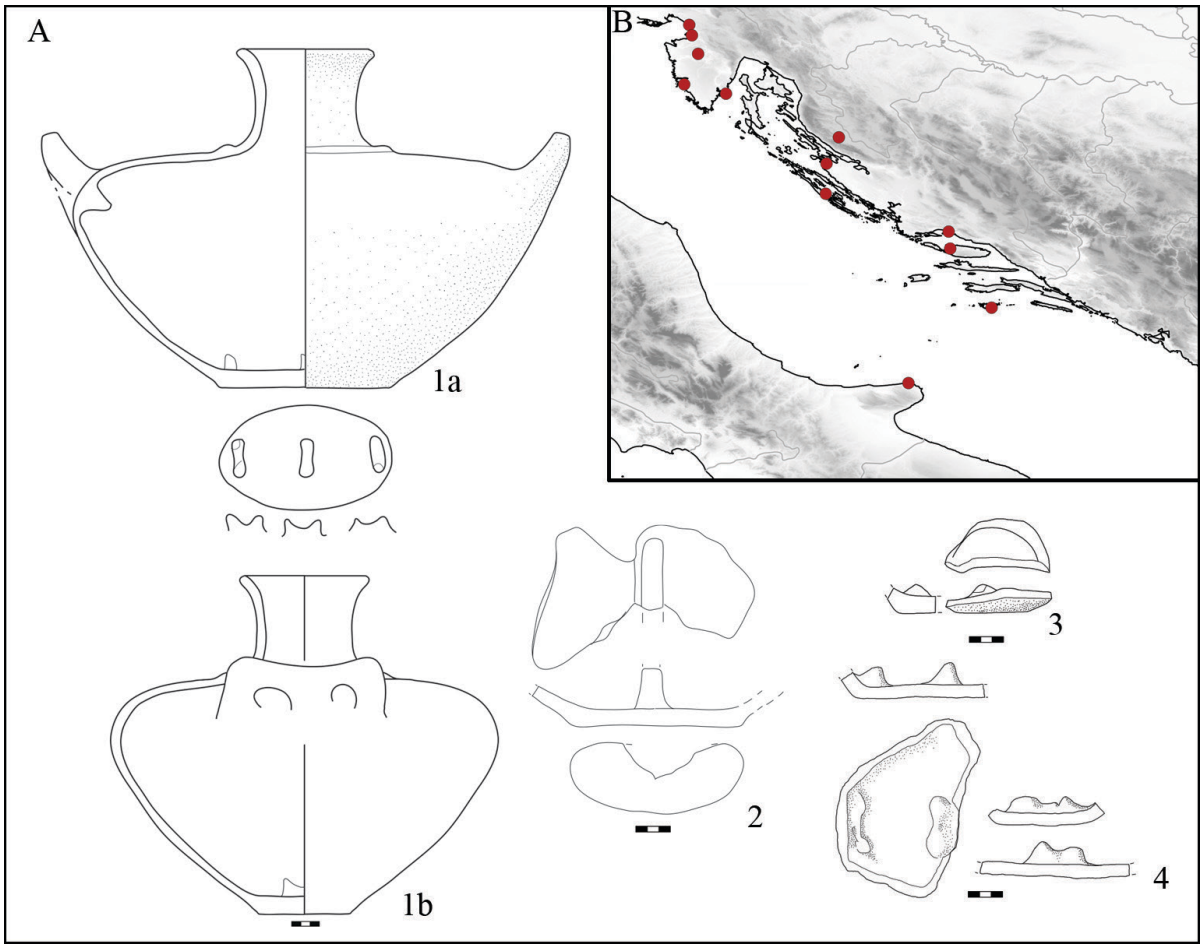

Figure 4. *A. "Butter-vessels"/bottoms with inner bulges from Central Dalmatia and northern Apulia. 1a–b. Rat (a. reconstruction; b. hypothetical reconstruction). 2. Rača Špilja; 3. Vranjic; 4. Manaccora, Punta (after Arena 2018). B. Distribution of "butter-vessels"/bottoms with inner bulges (tutuli) in the Adriatic area (reworked after Hellmuth 2014 and integrated with new examples from Central Dalmatia and northern Apulia).*

the Mycenaean world.[43] In fact, even if any Aegean-like vessel has been recovered at the site, different items (Aegean-like knives, ivory, vitreous material)[44] point at interactions/exchange with the eastern Mediterranean.

Northern European amber may have reached Trinitapoli via the Terramare area and northern Italy, but it is worth noticing that a portion of the amber recovered at the site may derive from local or other European deposits.[45] In the present state of research, amber is completely absent from Central Dalmatia Middle Bronze Age deposits.[46] This evidence has two possible interpretations; on the one hand, we might argue that amber was excluded from the interaction network involving northern Apulia and Central Dalmatia. On the other, I would suggest that this lack might be due to the state of research in Central Dalmatian coast and islands. Even if survey activities have identified a huge number of hillforts,[47] only few of them have been excavated, and in any case, settlements are not ideal contexts for finding amber, which is more common in burials. Even if we can imagine a Central Dalmatian island landscape speckled with dry-stone burial mounds, only a few of them have been excavated, and a portion has been destroyed through agricultural activities.[48]

[43] Bellintani 2010a.
[44] Bettelli 1999; Bellintani 2010b; Tunzi Sisto 1999b; 2001; 2003.
[45] Angelini / Bellintani 2005; Bellintani 2010a.
[46] Cwaliński 2014.
[47] Most of the survey results of the Adriatic Island Project are published in Gaffney et al. 1997 (for Island Hvar); Stančić et al. 1999 (for Island Brač); Kirigin et al. 2006 (for Vis, Biševo, Svetac, Palagruža and Šolta).
[48] Barbarić 2011b.

Conversely, in Istria amber is attested at some sites (e.g. Mušego, Vrčin, Žamnjak)[49] dating to between the late Early and – at the latest – the beginning of Recent Bronze Age; this evidence may be due to its geographical location, with amber routes running close-by, or to the existence at Istrian sites of élites, which were better integrated in macro-scale European networks, or – and we should not overlook this hypothesis – that this area has been more archaeologically investigated in respect to Central Dalmatia.

We anticipated before that, from the Early Neolithic onwards (at least until the Late Bronze Age), most chert recovered in Dalmatia, was very likely imported from the Gargano region. Even if extensive studies of Bronze Age chert assemblages are still lacking, the trade/exchange of such a commodity from northern Apulia to Dalmatia may have been still active.[50]

Finally, some aspects related to metal artefacts are worth analysing. Some types of swords recovered in northern Apulia at Manaccora and Trinitapoli are indeed closely connected to those found in north-eastern Italy, central Europe and the Danube area.[51] The Manaccora-type sword is closely connected to the Sombor-type and to the so-called "mit breiten schultern" swords in Harding's classification. Sacile and Montegiorgio types are connected to the Asenkofen and Annenheim types, respectively. Similar types are attested to in north-eastern Italy.[52]

Comparing sword types, it appears that there is divergence between the quantity and the quality of their possible comparisons. If it is true that most comparisons are to be found in areas other than the Balkan Peninsula, it must also be said that the best comparisons are established – again – with this district. One sword from Manaccora is very closely comparable with one sword from Joševa in Serbia and from Rabina in Herzegovina. The sword from Manaccora and that from Joševa seem to have been casted in the same mould (Fig. 5. C).

Regarding raw material and/or finished artefacts' provenance, the lead isotope signal of four swords from Manaccora and one from Trinitapoli is compatible with Trentino copper mines.[53] This evidence clearly needs to be integrated with further isotope and major and trace element analyses on more samples.

Moving from weapons to ornaments, spectacle spirals – a mainly female ornament typical of the eastern coast[54] – are attested both at Grotta Manaccora and at Trinitapoli[55] (Fig. 5. D).

It is worth underlining that, at the Ipogeo dei Bronzi, the number of spectacle spirals (more or less 50) almost corresponds to the number of females identified through anthropological studies (51).[56] As ornaments are strongly part of self-representation practices and we already saw how pottery production at Trinitapoli is a mixture of local and foreign models, it seems plausible to hypothesise the presence at Trinitapoli of a strong female component coming from Dalmatia.

Exogamy is a well-documented practice on a wide chronological and spatial scale and is largely documented in prehistory as well,[57] also on the basis of large-scale strontium isotope analyses.[58] Exogamy can either be a means to strengthen alliances[59] between distant communities with common strategic interests – which was likely in our case study – or the result of warfare, raids and kidnapping.[60] Whatever the reason for the presence of foreign women, it is clear that their presence played a transformative role in their host contexts.

[49] For amber in Istria see references in Hänsel et al. 2020, 218, footnote 209.

[50] Forenbaher / Perhoč 2015, 65; it is likely that chert recovered in Bronze Age stratigraphic units at hillfort Rat was also imported from the Gargano region (Zlatko Perhoč pers. comm.).

[51] Peroni 1984, 66-67; 1999.

[52] Bianco Peroni 1970; Harding 1995.

[53] Jung et al. 2011; Jung / Mehofer 2013.

[54] Della Casa 1996, 151-152.

[55] Baumgärtel 1953; Tunzi Sisto 1999b.

[56] Cavazzuti / Arena 2020.

[57] Kristiansen / Larsson 2005.

[58] At Trinitapoli strontium isotope analysis has only been performed on bone and tooth enamel of six individuals from the Ipogeo degli Avori. Results suggest that four of them were non-locals, possibly from Albania, the Balkans, or most notably, Greece (Bos 2005). The sample is clearly too small for any statistical evaluation, but it constitutes another element, together with bronze and ceramic types, for the mixed provenience of the people buried at this necropolis.

[59] Lévi-Strauss 1949; Bossen 1988.

[60] Cameron 2011.

Final remarks

We briefly listed all archaeological evidences that may contribute to outline trans-Adriatic interactions during the Middle Bronze Age, which, following material evidence datable to this phase, appear to be truly intense and strictly embedded in the lifestyles of the Adriatic communities (Fig. 6).

Undoubtedly, what we can trace archaeologically represents a minimal part of what has really occurred. For example, the suggestion of northern Apulia being specialized in textile production, with textiles decorated with the same motifs that we find on Apennine pots,[61] is extremely intriguing, and with much greater imagination we could suggest that tissues were one of the invisible commodities that were traded from one coast to another. This is pure speculation, but it helps in keeping in mind the gap between what we see and what was there.

To conclude, it is worth considering some macro-scale changes that may have occurred – or not – between the previous interaction phase (during the so-called Cetina phenomenon) and the Middle Bronze Age.

One might argue that interaction became more intense because a new seafaring technology was introduced, a new technology that allowed to speed the journeys and to carry more people and goods.

To the present state of our knowledge regarding seafaring in prehistory, the extraordinary implementation of trans-Adriatic interactions recorded around 1700/1600 BC, based on material culture evidence, cannot be correlated to the adoption of the sailing ship in the central Mediterranean. According to Broodbank's hypothesis,[62] this technology, representing a revolution in sea-travel parameters by halving the journey time and increasing the cargoes capacities, was adopted in the central Mediterranean at a later stage, during the 13th–12th centuries BC. It is likely that Adriatic communities were aware of the sailing technology thanks to their frequent encounters with sailors from the Aegean, who constantly travelled west from the 17th–16th centuries BC. But this clearly does not prove they sailed themselves. The only direct evidence for seafaring technology in the Adriatic area during the Bronze Age is represented by a shipwreck at Zambratija Cove (Istria), which is only partially preserved and questions concerning the propulsion system are still open. Radiometric measurements date its construction between the last quarter of the 12th and the last quarter of the 10th century BC.[63] We can imagine that, during the time frame under consideration, inter- and trans-Adriatic journeys taken on by Adriatic communities occurred on longboats similar to those that have been hypothesised for the Cetina period.[64] It has been suggested that such boats could cover a maximum daily radius of 50 km, thus allowing the crossing of the Adriatic basin at the height of Mount Gargano to the west and Sušac to the east, in a two-day trip, with a night stop at Palagruža.[65] If such a stop was still necessary during the Middle Bronze Age due to seafaring practices that were probably conservative in respect to the Cetina period, why has virtually no find datable to this phase yet been found on the island? Forenbaher already pointed out that this is not to be attributed to a bias of the archaeological record.

As we highlighted before, most Ljubljana/Cetina finds recovered on the island should refer to the rituals connected to seafaring practices that took place there more than to overnight stopovers, which left little, if any, archaeological trace.

The archaeological evidence we analysed clearly demonstrates that Middle Bronze Age trans-Adriatic seafaring was essential to coastal and island communities.

But if Palagruža was still used as landmark for navigation and as a shelter, why did no ritual activity take place there during the Middle Bronze Age?

One of the major changes occurring after Early Bronze Age 1 is the emergence in the Adriatic area of fortified settlements (to the west) and hillforts (to the east). This process implies the existence of a certain degree of organization, specialization, stratification and ability to plan. Whereas only feeble traces of interaction can be referred to for Early Bronze Age 2, we see a

[61] Iacono 2019, 114.

[62] Broodbank 2010, 256-257.

[63] Koncani Uhač et al. 2017.

[64] Broodbank 2010; Iacono 2019.

[65] Broodbank 2000, 102; Forenbaher 2018, 7; Iacono 2019, 65.

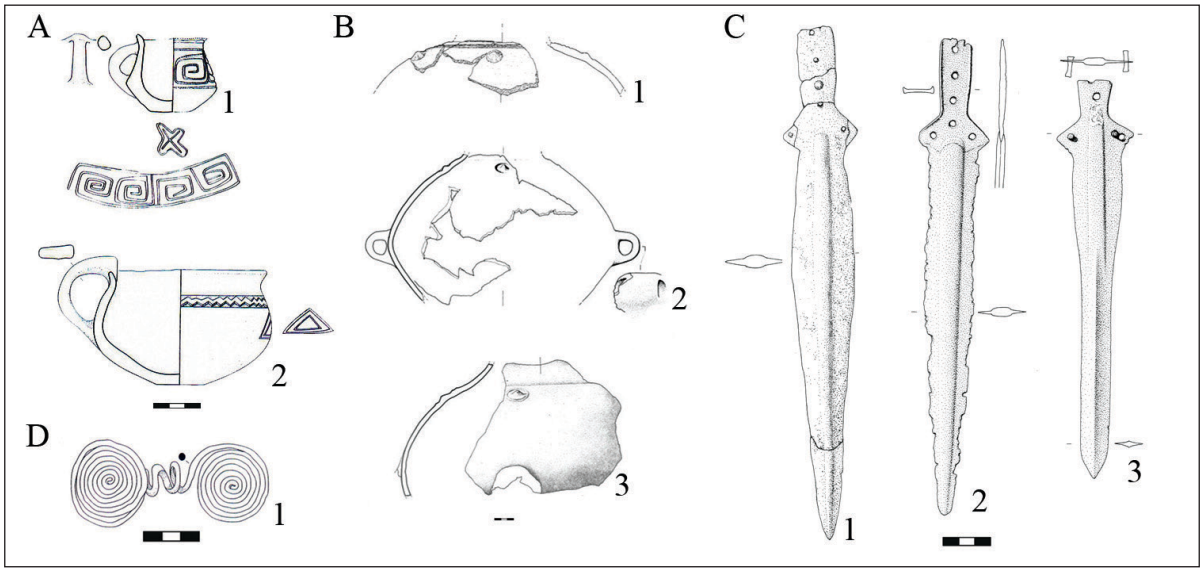

Figure 5. *A. Hybridizations from Trinitapoli (after Cataldo 1999, Tab. X. 1; VI. 1346). B. Transport jars. 1. Monkodonja (after Hellmuth Kramberger 2017, Tab. 69. 5); 2. Krajicina Špilja (after Kaiser / Forenbaher 2002, Fig. 9. 1); 3. Coppa Nevigata (after Cassano et al. 1987, Fig. 76. 2); C. 1. Grotta Manaccora (after Bianco Peroni 1970, Tab. 15. 104); 2. Joševa (after Harding 1995, Tab. 6. 33); 3. Rabina (after Harding 1995, Tab. 6. 35); D. Example of a spectacle spiral from Trinitapoli – Ipogeo dei Bronzi (after Tunzi Sisto 1999, Tab. XV. 1745).*

dramatic boost in connectivity during the Middle Bronze Age. It is probable that, by this phase, the fortified settlements/hillforts landscape had reached its stability and internal dynamics and, together with stability, a renewed investment on the external network was implemented.

From the Middle Bronze Age, interaction seems to be stable, organized and manoeuvred by the communities involved, most of them living in well-fortified settlements.

During the Ljubljana and Cetina periods, ritual activities at Palagruža seem to suggest that a crucial importance was attributed to the voyage itself and to the process of creation of mental maps of the Adriatic, which of course did not exist *a priori*, but were constantly created and reassessed through seafaring activities.[66]

We can therefore suggest that, from the Middle Bronze Age, attention shifted from the voyage to the place of landing, from the centre of the Adriatic (Palagruža) to its poles (northern Apulia and Central Dalmatia).

Surely a safe crossing was fundamental, but, at the same time, solidarity and trust with the hosting communities had to be constantly renewed and negotiated, representing the prerequisite for keeping the interaction network active and fertile.

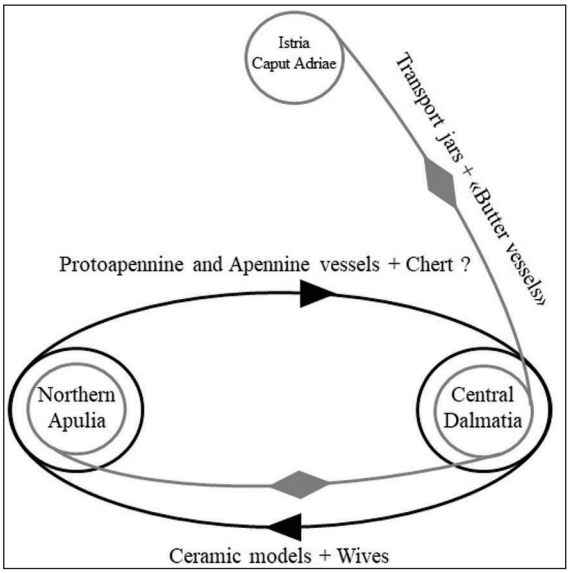

Figure 6. *Flows of models, goods and people between Istria/Caput Adriae, Central Dalmatia and northern Apulia.*

We already saw how the exogamic practices could have played a fundamental role in strengthening alliances.

The Manaccora Promontory – with the settlement on the top and the cave at its feet – together

[66] Maran 2007.

with the nearby Torre di Calalunga, is the nearest landfall from Palagruža.

We could therefore suggest that at least a part of the rituals that took place in different areas of the cave, where mixtures of local and Dalmatian-like ceramic types have been recovered, were part of the complex system of behaviours that were enacted to keep the network alive.

Rezime

Između dvije obale. Pregled transjadranskih veza u srednjem bronzanom dobu

Cilj ovog rada je da pruži sažet, ali obuhvatan arheološki pregled komunikacija, transfera i transformacija koji su se odvijali na području srednjeg Jadrana tokom srednjeg bronzanog doba (oko 1700 / 1650-1325 / 1300 BC) i koji su doprinijeli formiranju pogleda na svijet zajednica koje su živjele uz njegove obale. Geografske posebnosti, zajedno sa arheološkim podacima dostupnim za ovu fazu, čine datu oblast i vremenski okvir idealnom laboratorijom za istraživanje povezanosti udaljenih zajednica u razdoblju velikih transformacija, tokom kojih su i predio i društveni odnosi pretrpeli značajne promjene.

Na osnovu dostupne arheološke evidencije o transjadranskim komunikacijama i interakcijama, može se pretpostaviti da su prekomorski kontakti tokom srednjeg bronzanog doba bili zaista intenzivni i duboko integrisani u način života jadranskih zajednica (slika 6). Pri tom se ne smije izgubiti iz vida činjenica da ono što pokazuju arheološki ostaci predstavlja samo minorni odraz onoga što se zaista zbivalo. Na primjer, izuzetno su intrigantne indikacije koje ukazuju da su zajednice iz sjeverne Apulije bile specijalizovane za proizvodnju tekstila ukrašenog istim motivima kao i posude apeninske kulture. Polazeći od toga može se pretpostaviti da je tekstil bio roba kojom se trguje od jedne do druge obale. Iako iz tog doba nema očuvanog tekstila, zbog čega takva pretpostavka mora ostati na nivou spekulacija, ona je ipak od pomoći za sagledavanje diskrepance između onog što vidimo i onoga što je onda bilo.

Postavlja se i pitanje zbog čega je došlo do osjetnog intenziviranja transjadranskih interakcija u vremenu oko 1700/1600 BC. Je li to uzrokovano uvođenjem nove tehnologije morske plovidbe koja je omogućila brže putovanje i prevoz više ljudi i robe, ili su u pitanju neki drugi razlozi? Jadranske zajednice su vjerovatno bile upoznate sa aktuelnom tehnologijom plovidbe zahvaljujući čestim susretima sa mornarima sa egejskog područja koji su neprestano putovali na zapad od 17. do 16. vijeka pr.n.e. Međutim, nema potvrde da je u to vrijeme došlo do nekog znatnijeg tehnološkog napretka u razvoju lokalnog pomorstva, niti postoje materijalni dokazi da su domorodci sami plovili. Prema sadašnjem znanjima o pomorstvu u praistoriji, ovo intenziviranje se ne može dovesti u vezu sa uvođenjem jedrenjaka u morsku plovidbu. Ova tehnologija predstavlja revoluciju u svim parametrima pomorskog putovanja, jer znatno skraćuje vrijeme plovidbe i povećava kapacitet tereta. No, prema dosta uvjerljivim podacima Broodbanksa, jedrenjaci su na prostoru centralnog Mediterana usvojeni tek tokom 13–12. vijeka pr.n.e. U to vrijeme, ili nešto kasnije, pada i najstarija materijalna potvrda lokalnog pomorstva na jadranskom području. To je drveni čamac iz uvale Zambratija u Istri koji je datiran u vrijeme između posljednje četvrtine 12. i posljednje četvrtine 10. vijeka pr.n.e.

Prema tome, transjadranska putovanja tokom razmatranog vremenskog razdoblja mogla su se odvijati na dugim čamcima sličnim onima koji su pretpostavljeni za cetinski period i za ranija razdoblja. Takvi čamci obezbjeđuju maksimalni dnevni radijus od 50 km, omogućavajući prelazak jadranskog basena u visini Monte Gargana na zapadoj obali i Sušca na istočnoj obali, u dvodnevnom putovanju, sa noćnim zaustavljanjem na Palagruži. No, ako je takvo zaustavljanje bilo neophodno i tokom srednjeg bronzanog doba, postavlja se pitanje zašto na Palagruži nema nalaza iz ovog perioda? Forenbaher je već pokazao da to nije posljedica stanja arheološke istraženosti, već objektivni odraz situacije iz tog vremena. Naime, to ukazuje da putnici iz srednjeg bronzatog doba nisu imali stalnije postaje na Palagruži, već su se samo kratko zadržavali na ovom ostrvu.

Čini se da je za visoki intenzitet transjadranskih komunikacija u srednjem bronzanom dobu odlučujuća bila sigurnost plovidbe i rutiniranost plovidbenih puteva. To je bilo moguće zahvaljujući stabilnim kontaktima koje kontrolišu i sprovode dobro organizovane zajednice koje su živjele u sistematski utvrđenim naseljima. Plovidba na toj relaciji je već bila u velikoj mjeri savladana, a u takvim uslovima opada značaj međustanica na sredini Jadrana, kakva je bila Palagruža. Na njima nema dužeg zadržvanja, već je pažnja moreplovaca u punoj mjeri usmjerena na krajnja odredišta – centralnu Dalmaciju i sjevernu Apuliju.

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