Coll. Antropol. **26** (2002) 1: 361–378
UDC 572:903(497.5)"63"
Review

Prehistoric Populations of the Island of Hvar – An Overview of Archaeological Evidence

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A B S T R A C T

Prehistory of the island of Hvar was marked much more by continuity than by change. Only at one point during that long period, evidence clearly suggests arrival of a substantial body of immigrants. That event took place around 6,000 BC, and is associated with the introduction of farming. The next possible influx of immigrants may have happened around or soon after 2,500 BC, but the changes observable in the archaeological record are better explained by indigenous developments such as changes in the social organization of the local communities. By mid-first millennium BC, Hvar was populated by Illyrians who spoke an Indo-European language. It was then that the next confirmed penetration of a foreign population took place, with the establishment of Greek colonies. Four centuries later, Hvar was fully integrated into the Roman Empire.

Introduction

Over the last 25 years, modern population of the island of Hvar has been subject of intensive research, ranging from ethnohistoric and linguistic studies to population genetics[1–3]. The well-documented historic migrations, which are partly responsible for its current population structure[4,5], represent only the last chapter of a long history of the island's occupation. Written sources concerning its inhabitants cover slightly less than the last two and the half millennia, beginning with the Greeks' colonization of Hvar in the early 4th century BC. For information about the much longer prehistoric period, which preceded it, one must rely on material remains which testify to the islanders' activities, and occasional (rare) physical remains of those ancient inhabitants themselves.

Relative to the archaeology of the rest of Dalmatia, investigations into Hvar's prehistory started early[6,7]. Excavations of several key cave sites began during the second half of the 19th century and, in

Received for publication April 11, 2001

some cases, continued (with breaks) over many decades[8–15]. This has been both a blessing and a curse, since the early explorations provided a relative abundance of coarse-grained information, while destroying large parts of the investigated sites in the process.

The early explorers of Hvar worked according to the professional standards of their times. These standards have changed dramatically over the last few decades, and the quality of the old data is no longer satisfactory. Furthermore, development spurred by mass tourism since the 1960s damaged or destroyed numerous important sites before they could be properly investigated. This leaves us today with an imperfect archaeological record, which needs to be supplemented by new research, using up-to-date techniques, before it can be used as a reliable base for making inferences about the island's ancient past.

A recently completed archaeological survey of the island, carried out as a part of the »Adriatic Islands Project«, is a major step in that direction[7]. It has produced a comprehensive catalog, which lists more than 700 sites of all periods, among them over a hundred prehistoric sites. A small number of them were test-excavated, including re-excavation of some of the key prehistoric cave sites such as Grapčeva spilja[16]. This work provides reliable information about the distribution of sites across the landscape during different prehistoric periods, improves chronological control, and expands our knowledge about the material culture of the ancient islanders of Hvar. Nevertheless, our ideas about their use of the island landscape, subsistence economy, social organization, as well as their interaction with neighboring populations, are still quite sketchy. Extrapolating from such data to complex issues like population change and continuity is a notoriously risky undertaking. These cautions must be kept in mind while reading this paper, which offers a brief discussion of the major changes observable in the prehistoric record which might reflect the arrival of populations new to the island.

Evidence of Early Occupation

On a geological time scale, Hvar is a very young island. It came into being about 11,000 years ago, when the globally rising sea levels flooded the valley which separated a 70 km long coastal mountain range from the rest of the mainland. In all likelihood, the island has been inhabited ever since.

The Adriatic Sea, as we know it today, assumed its present form relatively recently. At the time of the last glacial maximum (around 18,000 bp) when sea levels were some 120 m lower than today, the Adriatic's area was only half its current size[17,18] (Figure 1). The shallow, north-western part of the Adriatic basin was a wide steppe[19], traversed by the river Po and its tributaries, and bordered by Dinaric mountains in the east and the Apennines in the west. All of the Dinaric coastal ranges, which were eventually to become the Eastern Adriatic archipelago, were at that time simply a part of the mainland.

Deglaciation, accompanied by a global rise of ocean levels, brought dramatic changes in topography. By the time of the Pleistocene to Holocene transition, around 10,000 bp, much of the productive North Adriatic plain with its rich ungulate fauna was lost to the invading sea. Relatively little is known about the human populations that inhabited the area during this period. There are two main reasons for this. First, undoubtedly, many sites were drowned when sea levels rose, and thus lost for investigation. Second, since Epipaleolithic and Mesolithic sites tend to harbor rather humble archaeological remains, they are not coveted objects of research among local archaeologists.

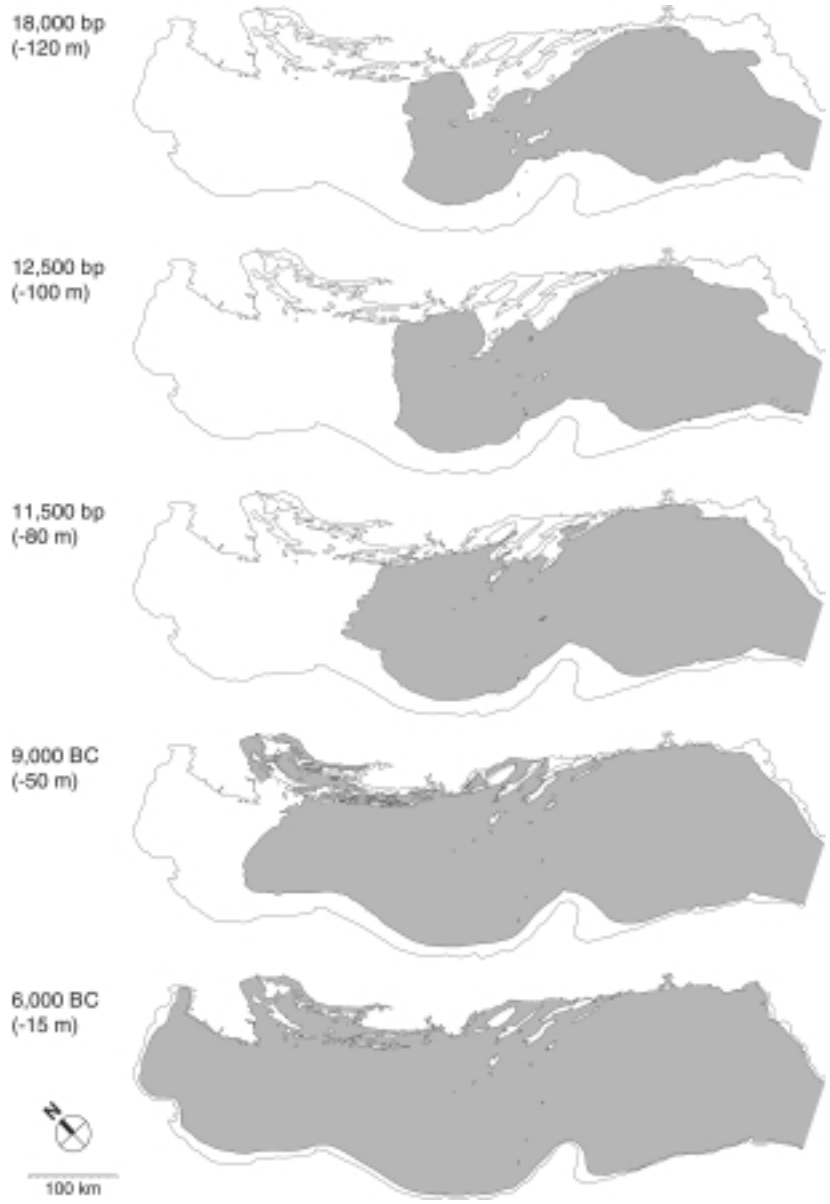

Fig. 1. Expansion of the Adriatic Sea since the last glacial maximum. Approximation based on Van Andel[23], the Bathymetric Map of the Adriatic[122], and ordinance survey maps 1:25,000. Alluviation and tectonic uplift/subsidence have not been taken into account. Dates for the Late Pleistocene are expressed in radiocarbon years before present (bp), without calibration, while dates for the Holocene, for which reliable calibration curves are available, are calibrated and expressed in years before Christ (BC).

That situation is now changing, thanks to a pair of research projects which are beginning to yield reliable information about bands of mobile hunter-gatherers and their changing subsistence strategies, as these groups adapted to radical environmental changes[19–21].

The earliest evidence of human presence on an Adriatic island comes from Kopačina cave on the island of Brač[22], which is Hvar's immediate northern neighbor. Layers containing faunal remains, charcoal and lithic artefacts have been dated by radiocarbon to the final Pleistocene, around 13,000 and 12,000 bp (Z-2403: 12,935 ± 250 bp, and Z-2404: 11,850 ± 220 bp)[20]. At that time, however, all islands except Sušac, Palagruža and Jabuka islets were attached to the mainland, since the sea level was still almost 100 m lower than today[23] (Figure 1).

While there is no unequivocal evidence of human presence during the final Pleistocene on what was to become the island of Hvar, there are some tantalizing hints. Numerous characteristically shaped flaked stone artefacts – tiny backed bladelets also known as »microgravettes« – were recovered from Badanj cave, located in Pokrivenik bay on the northern coast of the island. This tool type is a common component of lithic assemblages from Late Upper Paleolithic and Mesolithic sites of the wider Adriatic region[24–27]. The problem with microgravettes from Pokrivenik is that their archaeological context is uncertain. Most of them come from the old excavations by Grga Novak[28] and Vladimir Mirosavljević[29], who did not report their position within the site's stratigraphy. Much later they were recognized on purely typological grounds as »Late Gravettian and Mesolithic«[30]. Our own test excavations in Badanj, carried out in 1991, discovered uncommonly high densities of lithic artefacts, including some microgravettes, within the same levels that contained typical Late Neolithic »Hvar style« pottery[31]. Such pottery has been firmly dated to the 5th millennium BC by a series of radiocarbon determinations from Grapčeva cave[16]. While it is not inconceivable that tools resembling Late Upper Paleolithic microgravettes were used this late on Hvar, the association between lithics and Hvar-style pottery is highly suspect, because most of the layers in this steeply sloping cave seem to have been heavily disturbed or even redeposited[28]. Consequently, microgravettes from destroyed Upper Paleolithic or Mesolithic strata may have ended up in a secondary position, as residual finds within much younger Neolithic levels. The sheer quantity of lithic artefacts suggests such a possibility. So too do three previously unpublished radiocarbon dates on charcoal from levels containing microgravettes and pottery: TO-3425 (14,430 ± 100 bp), TO-3426 (14,920 ± 100 bp), and TO-3427 (15350 ± 110 bp).

Over the next millennium, the sea invaded the lowest intermontane valleys, separating Vis from the mainland around year 11,500 bp (Figures 1 and 2). Most of the large islands were formed only after 9,000 BC, during the Early Holocene, as the sea level rose above the –50 m line. Hvar was finally separated from the mainland approximately at that time. Evidence that at least some of these 'islands in the making' continued to be inhabited during that period comes from Hvar's immediate southern neighbor, the island of Korčula[32]. Strata that underlay the Early Neolithic levels in Vela cave, located near the western end of Korčula, yielded lithic artefacts, faunal remains and charcoal. Based on their stratigraphic context, composition, and formal artefactual analogies, these assemblages are attributable to the Early Holocene.

Unequivocal evidence for the occupation of Hvar during the Pleistocene to Holocene transition has not been recovered so far. However, given the fact that the islands in its immediate neighborhood were

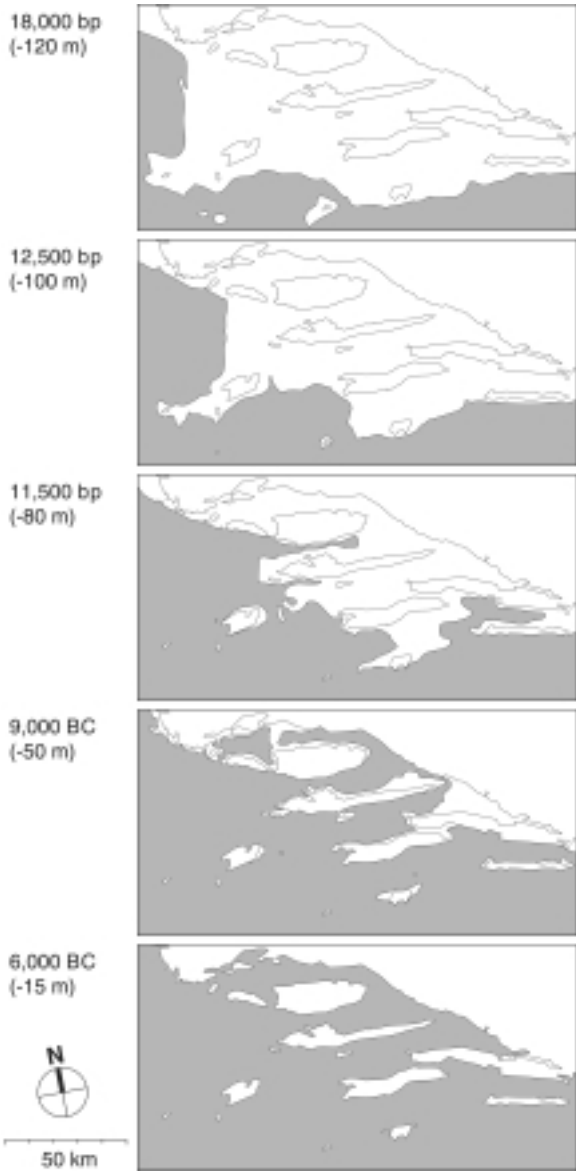

Fig. 2. Formation of the Middle Dalmatian islands. Approximation based on Van Andel[23], the Bathymetric Map of the Adriatic[122], and ordinance survey maps 1:25,000. Alluviation and tectonic uplift/subsidence have not been taken into account.

inhabited during that period, and that at least some hints of Late Pleistocene or Early Holocene settlement exist on Hvar itself, it seems reasonable to assert that Hvar too was already inhabited when it became an island. Its original population

would have consisted of the descendants of the hunting-gathering bands that used to inhabit the coastal plains and intermontane valleys of the glacial Adriatic basin, now drowned by the sea.

Introduction of Farming

Around 6000 BC, subsistence strategies of the people who lived along the Eastern Adriatic littoral were transformed by the introduction of domesticated plants and animals. Although zooarchaeological and paleoethnobotanical data obtained by controlled sampling are rather scarce, it is clear that the diet was extended to include – aside from hunted and gathered resources – such domesticates as goat and/or sheep, as well as barley, emmer and einkorn wheat[33,34]. A foreign origin of these domesticates is unquestionable, since they have no local wild ancestors. Instead, the progenitors of domesticated cereal grains have been securely identified, their relatedness to the domesticates has been clarified by genetic testing, and their primary niches located within Anatolia, Levant and northern Iraq[35,36]. Similarly, paleontological, cytogenetic, as well as archaeological evidence indicates that the ancestry of domesticated caprovines must be traced ultimately to Western Asia[37,38].

The beginning of food production in the Adriatic was closely paralleled by the introduction of important technological innovations, groundstone tools[39] and pottery vessels[40]. These novelties reflect changes in life style, which involved forest clearance, tillage, increased sedentism, and a greater need for transport and storage of agricultural products such as grain. The earliest pottery was often decorated by impressions of the edge of a *Cardium* shell. The essential technological and stylistic characteristics of this 'Impresso' ware are fairly uniform throughout the Adriatic region[39].

Numerous fragments of Impresso pottery from the lowest levels of Markova cave, which is located near the western end of Hvar, constitute the earliest firm evidence of human presence on the island. If it is true – as most of the evidence suggests – that farming and pottery in this region appeared together[41], then the people who inhabited Hvar during the sixth millennium BC must have had some knowledge of farming. Impresso levels in Markova cave contained animal bones[42,43], but since results of faunal analyses were never published, we do not know whether the assemblages contained domesticated species. Radiocarbon dates for Impresso sites from both sides of the Adriatic suggest that farming was introduced into Dalmatia from Southern Italy, and then spread northwards along the eastern Adriatic coast[39,44]. This assumption is further supported by recent finds of Impresso pottery on three offshore islands that provide a natural link between the opposite Adriatic shores, Vis[45], Sušac[46] and Palagruža[47]. These finds demonstrate that technological means existed at the time for a relatively fast movement of people, information and goods across fairly long stretches of open water[46]. One should note that although the sea level at 6000 BC was still about 15 m lower than today[23], the distances which needed to be crossed were only insignificantly shorter, due to the steep shores which characterize most of the Eastern Adriatic islands (Figure 1).

It may be over-optimistic to scrutinize the relatively meager archaeological record of the early sixth millennium Eastern Adriatic in hope of finding evidence for – or against – migration, but the combined evidence is nevertheless suggestive[44]. By all likelihood, there was some movement of people across the region. All that we know about their social organization[48,49] suggests that they would have moved in small groups, probably consist-

ing of only a handful, or maybe a few dozen, individuals. These regional developments must be viewed as a constituent part of the large-scale process of introduction of farming into Europe. In recent years, converging archaeological and genetic evidence has been used to argue that farming spread from Western Asia by a migration of early Proto-Indo-European speakers[50,51]. This argument is based on a correlation between the observed genetic gradients (expected on the hypothesis of migration) and the dates for the earliest farming settlements which steadily grow younger from Western Asia towards Western and Northern Europe[52–55]. The supporting evidence is far from unequivocal, and its reassessment is well beyond the scope of this paper. Nevertheless, accepting this hypothesis for the sake of the argument, one might justifiably offer the following scenario for the island of Hvar: Small groups of early Proto-Indo-European speakers land on the island some time around year 6000 BC, after crossing the Adriatic from southern Italy. They bring the basic knowledge of farming and associated technologies. Their subsistence strategy allows a much higher population density in comparison with the hunting-gathering strategies of their autochthonous predecessors. The original occupants of the island are soon outnumbered, and are either forced to adopt farming themselves and mingle with the newcomers, or face extinction.

Hvar During the Neolithic

Gaffney et al.[7] list 17 sites and findspots on Hvar that yielded Neolithic material, dating to the two millennia between approximately 6000 and 4000 BC (Table 1). Thirteen of these are caves, while the remaining four are findspots of isolated potshards or lithics. Two of the caves, Markova and Grapčeva, have been extensively excavated. Markova contained a thick deposit which yielded a long sequence spanning the entire Neolithic[13,42,43,56–58], while Grapčeva contained up to a meter thick sequence of Late Neolithic strata only[12].

Since most of the Neolithic finds on the island of Hvar were recovered from caves, this may create an illusion that the Neolithic islanders were primarily cave-dwellers. This was certainly not the case. Conveniently located caves and rock shelters were visited and used opportunistically throughout prehistory, historic periods, and are still used today, as temporary shelters, animal folds, and for a number of other purposes including ritual[59,60]. There is no doubt that the available sample of Neolithic sites is heavily skewed in their favor (Figure 3), for at least two reasons. First, the karstic landscape, which characterizes the island today, has been substantially modified by heavy erosion which was probably triggered by intensified agricultural exploitation during the Bronze Age, and certainly

TABLE 1
FREQUENCIES OF SITES BY SITE TYPE AND PERIOD

Site type	Neolithic		Copper Age		Bronze Age		Iron Age		»Prehistoric«	
	N	%	N	%	N	%	N	%	N	%
Cave	13	76	2	50	7	29	5	33	7	10
Isolated find / scatter	4	24	2	50	1	4	0	0	13	19
Hillfort	0	0	0	0	6	25	8	53	7	10
Cairn burial	0	0	0	0	10	42	2	13	41	60
Total	17	100	4	100	24	100	15	100	68	100

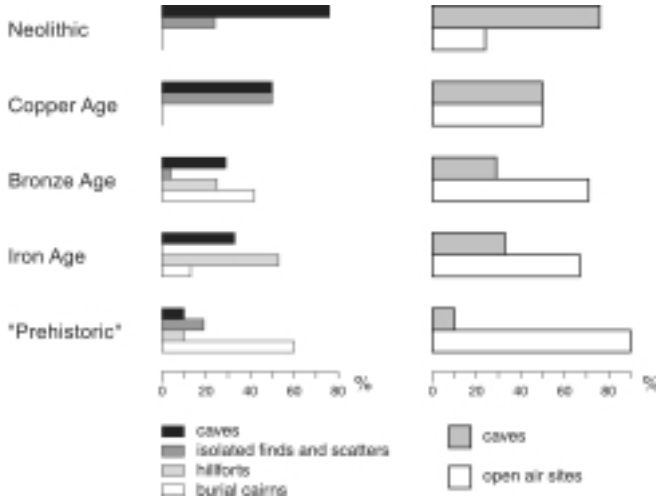

Fig. 3. Relative frequencies of site types by period: left, by the four site types (caves, isolated finds, hillforts and burial cairns); right, cave sites versus all open sites combined.

increased during the Graeco-Roman period[33,61,62]. Consequently, any earlier (Neolithic and Copper Age) open-air sites located on hilltops or slopes have been eroded to bedrock and thus completely destroyed, while those located near valley bottoms were buried under many meters of colluvium which made them archaeologically inaccessible under normal conditions.

The second reason is the apparent absence of monumental architecture. While Neolithic open-air settlement and burial sites on Hvar itself remain unknown, contemporary settlements from the mainland – such as Tinj[33], Smilčić[63], Danilo[64] or Lisičići[65] – did not yield any substantial structural remains. Burials are poorly known in general, but the few that have been excavated had not been marked on the surface by any kind of monument that would survive until present[40,66,67]. All this makes detection of open-air sites difficult even under the best circumstances.

The almost total absence of information about open air sites makes it virtually impossible to discuss issues like social organization or use of landscape by the Neolithic inhabitants of Hvar. If one considers the Eastern Adriatic in general, the absence of large, agglomerated settlements and monumental architecture, as well as any obvious status markers associated with burials, suggests that Neolithic social organization was characterized by small communities with little differences in ranking among the individuals.

Until very recently, archaeological investigations on Hvar followed a general trend which focused on constructing cultural histories by establishing pottery sequences based on chronostratigraphic relationships and formal analogies with contemporary pottery styles of the neighboring (and, sometimes, distant) regions. The island's most important contribution to that approach was the definition, based primarily on finds from Grapčeva cave, of a Late Neolithic pottery style which became known as the »Hvar culture«[12]. According to a recently obtained series of radiocarbon determinations[16],

this stylistic complex roughly covers the fifth millennium BC. With some regional variation, it extends over the entire Eastern Adriatic littoral and part of its hinterland[40]. One should keep in mind, however, that »Hvar culture« is just an expedient term, coined at the time when prehistory of the region was poorly known. The available evidence gives no particular reasons to believe that it originated on, or spread from, Hvar.

Other classes of finds received much less attention. For example, the Adriatic Neolithic subsistence economy can only be the subject of speculation, due to extremely sketchy faunal reports and a total lack of paleobotanical data. Lithic assemblages and bone tools from Markova cave have been summarily described[68–70]. They are reported to contain occasional artefacts made of obsidian, but Neolithic attribution of these artefacts should be considered with caution. Čečuk[70], Novak and Čečuk[43] and Batović[40] casually mention a few pieces of obsidian debitage and/or bladelets, and Batović ascribes them to the Late Neolithic. Novak's site reports do not mention them, however, and their context has not been published. While Neolithic attribution seems reasonable, a later date for these artefacts remains a distinct possibility, since Markova cave contains a long stratigraphic sequence which continues into Copper Age, Bronze Age and later periods. Since the most likely, geographically closest, source of this locally unavailable raw material is the volcanic archipelago of Lipari[71,72], these artefacts are usually interpreted as evidence of contacts between Dalmatia and the Tyrrhenian coast of Italy.

Interaction with Italy is further indicated by numerous similarities, often cited in the literature, between Dalmatian and Italian pottery styles throughout the Neolithic, from the Early Neolithic Impresso pottery, through various polychrome wares of the Middle Neolithic, to the mutually closely similar Late Neolithic »Hvar« and »Diana-Bellavista« wares[39,40,73–75]. While some sort of interaction between the opposing Adriatic shores seems undeniable, the present evidence can hardly allow meaningful discussion of its nature and intensity, or how it may have changed through time. It seems reasonable to propose that these contacts grew less intensive after the initial influx of immigrants from southern Italy at the very beginning of the Neolithic, after which there is no evidence for population change at least until the end of the Neolithic period.

Similarity between pottery styles can also be used to argue for contacts between Dalmatia and its Western Balkan hinterland. Impresso pottery has been recovered from sites in northern Bosnia[76]; the Middle Neolithic pottery from central Bosnia has much in common with the contemporary coastal »Danilo« wares[40]; the Late Neolithic »Hvar« ware appears deep in interior of Hercegovina[65]. Since the area covered by similar pottery styles seems to be shrinking towards the coast as Neolithic progresses, it is tempting to interpret that reduction of territory as a reflection of decreasing interaction. One should beware of hasty conclusions, however, since dissimilar styles do not necessarily indicate the absence of interaction, and may, on the contrary, be an index of intense interaction[77].

The Eastern Adriatic Neolithic is followed by a rather poorly known Copper Age which lasts roughly between 4000 and 2500 BC. Even the proposed dates of its duration must be regarded as very provisional[78]. Only four Copper Age sites have been recorded on Hvar, two of which are caves, while the other two are isolated findspots[7]. Virtually nothing is known aside from pottery. The earlier part of the Copper Age is characterized by a distinct style of channeled ware[79,80].

Since channeling as a decorative technique comes into fashion roughly simultaneously in many parts of Southeastern Europe, this might indicate that interaction with the Balkans hinterland is intensifying once again. However, aside from this rather small fraction of channeled shards, the rest of the pottery assemblage remains firmly embedded in local Mediterranean stylistic traditions[79].

Relatively few human skeletal remains have been recovered that may be attributable to these periods. Formal burials are very rare during the Eastern Adriatic Neolithic[66], and are totally absent during the Chalcolithic. It may be that the dead were regularly disposed in ways which are archaeologically invisible. On the island of Hvar, formal burials have not been recovered so far, but isolated human bones have been reported from Neolithic levels of several Hvar caves. Most were recovered by early investigators, which means that their contexts are often insecure, and the material is usually no longer accessible. An exception is the assemblage from recent test excavations of Grapčeva cave, where a number of disarticulated human bone fragments have been recovered[81].

Emerging Social Complexity

As opposed to the essential continuity, which characterizes the Neolithic to Copper Age transition in the Eastern Adriatic, the contemporary archaeological record of Southeastern Europe is marked by substantial changes. It has been argued – most vocally and influentially by Gimbutas[82,83], expanding on the work of Childe[84] – that these changes reflected immigration of Proto-Indo-European populations from their presumed original homeland in South Russian steppes. The concept has been severely criticized by Renfrew[51] and can no longer be taken at face value. More recently, however, a modified migrational hypothesis gained some support from genetic studies[52]. It may prove eventually that while the first farmers of the Early Neolithic were also the earliest Proto-Indo-European speakers to reach Europe, a second influx of Proto-Indo-Europeans from South Russian steppes took place during the later part of the Copper Age. It is not the purpose of this paper, however, to discuss general issues of European prehistory, but to investigate whether the archaeological record of Hvar lends any support to the Copper Age Indo-European immigration hypothesis.

While one of the main characteristics of the Eastern Adriatic Copper Age is its continuity with the preceeding period, its end (around 2500 BC or a little later) is marked by a set of changes. On the island of Hvar, one salient change is the increase in the total number of sites. This becomes very obvious if one takes into account the duration of the periods in question, and calculates numbers of sites per century for each period. With this correction, Bronze Age sites are almost twice as numerous as Neolithic sites (Figure 4). This may be seen as a reflection of population increase, but such interpretation is

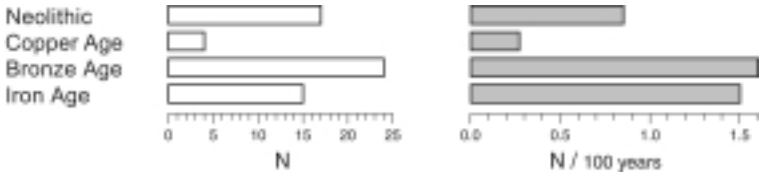

Fig. 4. Number of sites by period: left, total number of sites; right, number of sites per century.

not without problems, due to differential chances of survival and recognition inherent to sites of different periods. While the Neolithic is characterized by the absence of monumental architecture, and numerous Neolithic sites may have been eroded away or buried by colluvium and thus made archaeologically invisible, the Bronze Age is marked by the appearance of burial mounds and fortified settlements, both of which often remain visible as prominent features of the modern landscape. On the other hand, more than half of the 128 prehistoric sites on Hvar could not be attributed to a specific prehistoric period[7]; most of those non-specific »prehistoric« sites are burial mounds, which almost certainly belong to Bronze or Iron Age. This would make the increase in the number of sites after the Copper Age even more pronounced. However, it must be remembered that burial mounds are mortuary monuments for a specific (small) segment of the society. Their construction is dependent on social factors, and their increasing number does not necessarily reflect an increase in general population. Consequently, while the general impression is that the population of the island grew during the Bronze Age, the magnitude of this growth is impossible to estimate due to many uncertainties involved.

Another change, already mentioned above, concerns mortuary customs. Beginning around 2500 BC and continuing into the Bronze Age, individual burials under stone cairns became common throughout the Eastern Adriatic. For the first time, there is clear evidence for differential treatment of the dead. First of all, the overall number of such mortuary monuments is rather low. Clearly, not everyone was buried in stone cairns, but only members of a particular segment of the society. There is considerable variation in size of burial mounds, which involves differential labor expenditure for their construction. The presence of status markers such as archery equipment, as well as valuables such as bronze objects, make some burials more prominent than others[85]. On the island of Hvar, Gaffney *et al.* list over 50 sites containing one or several burial cairns[7]. More than 40 cairn burials have been excavated, but most of those excavations took place during the 19th century, and very little has been published even from some of the more recent excavtions[86]. Consequently, reliable information is lacking in spite of a relatively large number of explored cairns. A single exception are the three burial cairns around Bogomolje explored by Marović[87]. Based on such imperfect evidence, a few general remarks can be offered. It is clear that cairn burial became common on Hvar no later than during the Early Bronze Age. The custom continued essentially unchanged into the Iron Age, most likely lasting until its end. Cairns vary considerably in size, from low ones that are just a few meters across, to mounds several meters high and 30 meters in diameter. They usually contain a single central burial, with the deceased in a flexed position placed into a stone-slab cyst. Generally, grave goods are not too copious: they may be completely absent, or consist of a pottery vessel or two, and only rarely include bronze weapons, tools or ornaments.

Roughly contemporary with the introduction of cairn burials is the appearance of hillforts, relatively small settlement sites occupying dominant points in the landscape. Their defensive positions are often strengthened by drystone ramparts that encircle the sites or protect their easiest approaches. Very little systematic work has been carried out on such sites, and details of their internal layout can not be discussed. The question of their function as local or regional centers remains unclear, especially for the Bronze Age. Temporal attribution of hillforts is

based primarily on surface finds of pottery. Gaffney *et al.* list six hillforts with traces of Bronze Age, and eight with traces of Iron Age occupation[7]. Like cairn burials, many of them survived until the end of Iron Age and later, into the period of Roman domination. This shift of settlement towards defensive positions hints at an increase in conflict situations, possibly as a consequence of growing population density.

Any reliable estimate of population size during this period is hampered by the lack of sophisticated settlement data. In a similar situation, Stančič and Gaffney roughly estimated the population size of the neighboring island of Brač by arbitrarily proposing an average of 100 inhabitants for each one of its Bronze Age hillforts[88]. When applied to Hvar, this would translate to a population of about 600 people for its six documented Bronze Age hillforts. This estimate should be regarded with greatest caution, however, since it rests on several assumptions which call for further investigation. One of them is that we do not know whether all of the known Hvar hillforts were ever occupied simultaneously. On the other hand, there is a distinct possibility that not all of them have been identified[89], or that some have been damaged beyond recognition. Furthermore, some of the seven hillforts which have not been attributed to a specific prehistoric period[7] may eventually prove to have been occupied during the Bronze Age. Finally, the possibility of dispersed settlement outside hillforts is not taken into account. Consequently, the proposed number of 600 people for the entire island is probably a rather low estimate.

One may expect that agricultural intensification would have paralleled the assumed population growth. In Northern Dalmatia, evidence for adoption and possible diversification of mixed farming practices, as well as remains of a wide range of stone field remains, suggest that such intensification took place during the Bronze Age[33]. The virtual absence of relevant classes of evidence from the island of Hvar itself prevents any meaningful discussion of this topic in local terms.

Finally, there is evidence that interaction networks which were already in place during the Neolithic were gaining in extent and importance. Certain classes of Bronze Age pottery, and certain kinds of metal artefacts have been shown to exhibit stylistic similarities over quite wide areas, suggesting interactions across the Adriatic and into the Balkan interior[90–93]. The introduction and increasing use of metals required stable exchange networks, since the Eastern Adriatic region lacks adequate sources of copper and tin[94]. Metallurgy would eventually provide opportunities for economic specialization, particularly in the case of prestige goods, whose production readily lends itself to elite control[95].

Even if one accepts the possibility of immigration of Proto-Indo-European speakers from Central Asia into Eastern and Central Europe during or near the end of the Copper Age, it does not follow that the immigrants must have reached the Adriatic coast. Identifying ethnicity and documenting migrations from archaeological evidence alone is notoriously elusive[96–98]. Given the scanty Eastern Adriatic archaeological record for the period in question, proving migration in this particular case still remains an impossible task. Much has been made of the occasional appearance of gouged pottery, resembling that from Vučedol, in Copper Age contexts of some of the Eastern Adriatic sites[79,99]. Even if one could show that the Copper Age Vučedol population spoke a Proto-Indo-European language (which one can not), occasional shards of stylistically similar pottery can hardly be taken as direct evidence for arrival of Proto -Indo-European speakers on the coast (in

fact, as already discussed, Proto-Indo -Europeans may have arrived there over three millennia earlier). Similarly, comb -impressed wares which in the Eastern Adriatic mark the transition from Copper to Bronze age[85,99–101], with close analogies in the Eastern Alpine region[102] and general affinities to the Bell-Beaker complex[79], may tell us something about interaction networks, but should not be interpreted as direct evidence of migration. Absence of evidence, however, is not evidence of absence. One can not rule out *a priori* some population influx – possibly, an event that would fit an »elite dominance« model[51], but which would be hard to document archaeologically, especially when one considers the character of the currently available data. It should be stressed, however, that the changes observed in the archaeological record of the island of Hvar in particular, and in the Eastern Adriatic in general, may be well understood in the context of emerging social elites alone, and do not require a migrational explanation.

Illyrians, Greeks and Romans

During the Iron Age, which covers roughly the last millennium BC, hillforts and burial cairns similar to their Bronze Age predecessors remain the most common types of archaeological sites on Hvar. Although the total number of sites apparently drops relative to the Bronze Age (Figure 4), the number and the average size of hillforts seem to be increasing. One should remember, however, that over 50% of all prehistoric sites have not been attributed to a more specific period. Most of these are burial cairns, and a large fraction of them might actually belong to the Iron Age. The estimate of the island's total population can be attempted once again by following the approach of Stančič and Gaffney, who propose 200 people for each Iron Age hilfort on the island of Brač[88]. Following their assumption, the eight Iron Age hillforts would add up to a population of 1600 people for the island of Hvar. All caveats regarding Bronze Age population estimates are equally valid for the Iron Age. Nevertheless, it seems that the general long-term trend of population increase continues from Bronze to Iron Age. Gaffney and collaborators argue that a two-tier settlement hierarchy is observable for this period[61,89]. This pattern may reflect political integration above a local community level.

A variety of archaeological evidence bearing on the question of interactions between the Eastern Adriatic and its neighboring regions throughout this period has been surveyed and discussed at length in the literature[103–107]. Of particular interest is the increasingly frequent occurrence of exotic goods originating from the opposite shore of the Adriatic[108,109] and the Aegean[105,110]. Many of these imported objects are luxury items – offensive and defensive weapons, or fine, wheel--made, painted pottery. Intensive interaction with the growing Central and Western Mediterranean polities eventually, before the close of the first millennium BC, culminated in the full integration of the Eastern Adriatic into the Mediterranean world system. By that time, this region has emerged from being on its 'margin' to becoming a part of its 'periphery'[111].

The island of Hvar, with its strategic location on maritime routes, must have played an important role in those networks. A major hilfort was located above the best anchorage on the island's southern coast (today, the port of the town of Hvar). While all architectural remains of this hillfort have been destroyed by construction of later fortifications, a large surface scatter includes exotic finds such as imported Apulian pottery ($7^{th} – 5^{th}$ century BC)[109]. Recently, such pottery was found also at Lompić, a hillfort which

controls the entry into the bay of Stari Grad[119], while Stari Grad itself yielded a few black-figure painted shards of Greek provenience, dated to the late 6th or early 5th century BC[110].

With Greek penetration, the Eastern Adriatic gradually enters the realm of history. The earliest written sources (beginning around 500 BC with Hecateus of Miletus) are scarce, sketchy, and often contradictory, but by mentioning various autochthonous 'tribes', they provide the earliest names for the local ethnic communities[112]. Eventually, all of these 'tribes' came to be considered as members of a much larger, composite and rather heterogeneous ethnic entity known as the Illyrians[112–114]. For the first time we know beyond doubt that these indigenous populations spoke Indo-European languages[115].

Some authors assume that the presence of Illyrians and their direct ethnic predecessors in this region can be traced back to the Late Bronze Age[90], or even the Early Bronze Age[112,113]. Their arguments, however, are based almost exclusively on stylistic continuities observable in the material record, and therefore must be regarded with reserve. What is certain, however, is that at the time of the first written sources, Illyrian 'tribes' were already present for a while along the Eastern Adriatic littoral. Which of these 'tribes' inhabited Hvar? Some half a dozen names for ethnic groups are mentioned in or near the Middle Dalmatian region (such as Hierastamni, Bulini, Hili, Nesti and Manii, as well as Delmatae and, possibly, Ardiaei), but the early sources usually provide just a hint of their geographic location. Consequently, there is much discord among different modern authors about actual territories of these 'tribes' (*e.g.*, for Ardiaeii, see Benac[113], Papazoglu[116], Stipčević[112], Suić[114], and Zaninović[117]). None of these names are directly related to any of the Middle Dalmatian islands. When describing an attack on the Greek colony of *Pharos*, which took place soon after it was established in the early 4th century BC, a written source refers to the autochthonous islanders of Hvar simply as 'barbarians', who were supported by the 'Illyrians from the mainland'[118].

Greek colonization, which in the Eastern Adriatic was not particularly intensive and took place relatively late, was nevertheless an important agent of change. One of the two historically and archaeologically well-attested colonies – *Pharos* – was on Hvar, at the present-day location of the town of Stari Grad. It was founded in the year 385/4 BC, by colonists from the Aegean island of Paros[119,120]. The establishment of the colony had a profound impact on local developments. In biological terms, it brought the local, autochthonous population into direct physical contact with foreigners from a distant region. In sociocultural terms, it introduced writing, market economy, a different socio-political system and a number of technological innovations. It also gave the island its name which, with minor alterations, survived until the present day.

Hvar and its Greek colony continued to play an important role during the initial stages of the Roman drive into the Balkans, which took place in late 3rd century BC. Under Demetrios of Pharos, it resisted the Roman advance – a mistake for which it was severely punished[118]. By the time of Christ, the island had become a part of Roman Dalmatia[121] and with it was fully incorporated into the Roman empire, with free movement of people and goods across the Mediterranean and beyond.

Continuity and Change: A Tentative Conclusion

As based on currently available archaeological evidence, the proposed conclusions regarding population continuity

and change on the island of Hvar must be taken as provisional, open to good deal of modification which will probably come with future research. It seems, however, that the prehistory of the island (as well as the wider Eastern Adriatic region) was marked much more by continuity than by change. Only at one point during that long period, several lines of evidence suggest arrival of a substantial body of immigrants. That event took place around 6000 BC, and is associated with the introduction of farming. There is a distinct possibility – but no consensus yet – that these Early Neolithic farmers already spoke an early Proto-Indo-European language.

The next possible influx of immigrants may have happened almost four thousand years later, around or soon after 2500 BC, with the hypothesized (but traditionally widely accepted) Indo-European migration into Europe. While such a possibility can not be dismissed out of hand, there is nothing in the archaeological evidence from Hvar (or from the wider Eastern Adriatic region in general) to support it. The changes observable in the archaeological record are best explained by indigenous developments such as changes in the social organization of the local communities.

Population estimates for the Neolithic can not even be attempted, while those for later prehistoric periods must be regarded with the greatest caution. The island's Bronze Age population may have totaled about a thousand people, and it may have doubled during the Iron Age.

At the dawn of history, in mid-first millennium BC, Hvar was populated by Illyrians who, beyond doubt, spoke an Indo-European language. It was then that the next confirmed penetration of a foreign population took place, with the establishment of a Greek colony of *Pharos* early in the fourth century BC. Given the relatively small number of colonists, their socio-cultural impact probably exceeded by far their biological contribution to the island's populace. Only four centuries later, however, Hvar was already fully integrated into the cosmopolitan Roman Empire, where people and goods moved freely from Iberia to the Levant and from Africa to Scotland.

Acknowledgment

This paper was written as a part of the Scientific Research Program »Anthropological Research of the Population Structure of Croatia« (project no. 01960103 of the Ministry of Science and Technology, Republic of Croatia).

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PRETPOVIJESNO STANOVNIŠTVO OTOKA HVARA: PREGLED ARHEOLOŠKE GRAĐE

S A Ž E T A K

Pretpovijest otoka Hvara obilježena je kontinuitetom više nego promjenom. Samo jednom tijekom tog dugog razdoblja arheološka građa jasno ukazuje na priliv znatnijeg broja useljenika. Taj događaj zbio se oko godine 6000. prije Krista i povezan je s uvođenjem zemljoradnje. Slijedeće pritjecanje useljenika možda se dogodilo sredinom trećeg tisućljeća prije Krista ili ubrzo nakon toga, no promjene vidljive u arheološkoj građi mogu se bolje objasniti promjenama društvene organizacije autohtonih zajednica. Prema najranijim povijesnim izvorima, sredinom prvog tisućljeća prije Krista na Hvaru žive Iliri koji govore indoeuropskim jezikom. Do slijedećeg, povijesno dokumentiranog prodora strane populacije dolazi s osnivanjem grčkih kolonija, početkom 4. stoljeća prije Krista. Četiri stoljeća kasnije Hvar je konačno uključen u Rimsko carstvo.