Tünde HORVÁTH & Jacqueline BALEN

THE CULTURAL ATTRIBUTION AND DATING OF THE CULT VESSEL FROM SZELEVÉNY - VADAS

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Research Center for the Humanities,
Hungarian Academy of Sciences,
Institute of Archaeology
I.Ker Uri U 49
H-1014
Budapest, Hungary
horvath.tunde@btk.mta.hu

Arheološki muzej u Zagrebu,
Trg Nikole Šubića Zrinskog 19
HR-10000 Zagreb
jbalen@amz.hr

In this paper, a new, more acceptable dating in the Late Copper Age/Early Bronze Age period for the rectangular vessel decorated with ritual scenes from Szelevény is proposed. New dating is based on matching finds recovered from the Kostolac layer of the Gomolava tell settlement and the open settlement at Đakovo–Franjevac. This date is supported by the tempering agent and the decoration made using the Furchenstich technique, as well as by the vessel's design and rectangular form. Instead of offering yet another interpretation of the ritual scene, this study focuses on the depiction of the environment shaped by communities, a new element of the Late Copper Age world reflected by a number of similar, contemporary finds.

Key words:

Rectangular vessel versus wagon model, Kostolac culture versus pottery style, post-Baden versus conventional Late Copper Age

Introduction

This brief study focuses on the depictions adorning the sides of the unique Hungarian finds: Szelevény vessel found during vine planting in 1893 (Kovách 1894) (Fig. 1). The rectangular vessel was identified as a stylised wagon box in the Hungarian Prehistory (Fettich 1969) or, alternately, it had perhaps been used as an altar or other ritual vessel (Rezi Kató 1998, 2001). Discussed here will be the interpretation of and the possible parallels to the decorative designs from Croatia, as well as their technical execution in order to shed fresh light on the vessel's cultural attribution and chronological position.

The vessel was presented to the Tisza-zugh Archaeological Society by Ernő Tarcsányi, an engineer; it was later incorporated into the prehistoric collection of the Hungarian National Museum. It is now one of the highlights of the museum's permanent exhibition.

Fig. 1. View of the three sides of the Szelevény vessel (photos by András Dabasi, by the courtesy of the Hungarian National Museum), and the drawing after Rezi Kató (Rezi Kató 2001, T. I–II: 1–2).

The present study is based on Albert Kovách's initial publication (Kovách 1894), Nándor Fettich's article on wagon models (Fettich 1969), Gábor Rezi Kató's studies (Rezi Kató 1998, 2001), and the new excavation evidences from Croatia.

Two main theories have been proposed regarding the vessel's function: N. Fettich believed that it was a wagon model depicting the wagon box, while G. Rezi Kató suggested that the vessel's rectangular form reflected its ritual nature and that the depictions could be conceptualised as an elaborate set of symbols. "It would appear that the artefact's function is indicated by the scene on the side, probably portraying a sacrificial offering. The vessel from Szelevény was in all likelihood made for ritual purposes – it was a ritual vessel made for a specific occasion. I would even refrain from calling it a 'vessel' (Rezi Kató 2001: 124, note 15).

The rectangular artefact is decorated with three variants of the same scene on its exterior (the two longitudinal sides are identical, this being the reason that three scenes can be distinguished despite

the vessel having four sides). Their interpretation is a difficult task in itself. The scenes were apparently created in two successive phases: the original scene and the subsequent additions, suggesting that the original composition had been changed or complemented during the vessel's use or use-life, which in turn would imply that the vessel was not made for one specific occasion. It must in all fairness also be noted that the restoration of the artefact – described in detail by Rezi Kató – had damaged the surface to the extent as to make the interpretation of the portrayed scenes and the reconstruction of the sequence of their creation very difficult.

Technological observations

We shall first focus on a few technological traits, which have been neglected by earlier studies. One important point is that the tempering agent, namely finely crushed pottery of uniform grain size (grog) used during the vessel's manufacture can be clearly made out on the breakage surfaces. The tempering agent is an important anchor for the vessel's date because this temper was used by the potters of the Middle and Late Copper Age (Gherdán & Horváth 2009; Gherdán *et al.* 2010; Horváth 2010a), and thus excludes a date in the Neolithic or the Bronze Age. Neolithic cultures tempered their wares with organic matter and shells. The ceramics of the Early Bronze Age vary regarding the tempering agents: a limestone temper characterizes the pottery of the Somogyvár–Vinkovci culture in Transdanubia, while another conventional Early Bronze Age cultures (e.g. Makó, Nagyrév, Kisapostag cultures) used a little grog mixed with micaceous sand (Kreiter 2007; Gherdán 2009).

Another important technical trait is one of the procedures used for decoration, originally described as rolled cord-impressed decoration (Fettich 1969: 34). This was one of the strongest arguments in favour of a Bronze Age date. However, this argument can be rejected: a personal examination of the vessel revealed that the overwhelming portion of the decoration was made up of stabbing created using vegetable fibres with a rectangular section, while the linear patterns (such as the double chevron motif on the two longitudinal sides and the human figure on the central side, the key symbols appearing on the vessel) were made by first creating a "bedding" with a deeply incised line and then filling it with stabbing Very few cultures used Stab-and-drag/*Furchenstich*-like dense, evenly spaced, deep stabbed dots for decorating their ceramic wares: in addition to the *Furchenstich* culture named after the stab-and-drag technique used for adorning pottery, it only appears in the Coțofeni, Kostolac and the Vučedol cultures. In contrast, this decorative technique was not employed during the Boleráz/Baden sequence and it is not identical with the rolled cord-impressed technique characterising the pottery of the Kisapostag, the Encrusted Pottery and the so-called *Litzenkeramik* cultures of the Bronze Age.

Rectangular vessels appeared in the Hungarian Middle Copper Age Bodrogkeresztúr and Hunyadihalom cultures (Patay 2005: P. 19; doubled vessel: P. 22. 1–3), as well as in the Baden culture, as shown by finds of wagon models, pedestalled goblets and bowls (Banner 1956: wagon model: P. CXX; pedestalled goblet: P. LXXXIX: 38, XCII: 16–17; bowl: P. LIV: 8.).

Mention must be made of the two dimensional parallels to the Szelevény vessel, the so-called house models from Balatonőszöd–Temetői dűlő (Horváth 2010b: 100–107). On some magical object the central side was formed in similar way (Horváth 2010b: Abb. 14–15), as on the back side of the Szelevény find. The upper part of the decorated back side of the Szelevény vessel is curved, and some cutting line is visible on the reconstruction proposed by G. Rezi Kató (Rezi Kató 2001: P. II: 1–2). These marks cannot be observed on the vessel in its present condition, perhaps these were part of a mistaken restoration that was removed later.

Artefacts resembling altars have been published from the Middle Copper Age tell settlement at Ovčarovo and Ruse (Bulgaria), both of which date to Gumelnița–Karanovo VI culture (Todorova 1982: Abb. 40; Gimbutas 1989: Fig. 195). The standing altar from Ovčarovo is decorated on the front and back sides, and its upper part rises above the middle part not unlike the roof of a house (Todorova 1982: Abb. 40; Todorova *et al.* 1983: P. 90: 13). Three similar, simple finds decorated with painting were known from the site as the part of a cult-scene, interpreted as a calendar system (Todorova *et al.* 1983: P. VII: 89; Nikolov 1998). Comparable two dimensional finds came to light at Dunaszekcső–Várhegy and Bátaszék (Vučedol culture, Ecsedy 1984: 93, P. 8, 10: 1).

The vessel's decoration and its parallels from the Copper Age

The interpretation of the scenes appearing on the vessel is virtually impossible, one reason for this being that the potter or potters changed their intention at least twice, and thus the original meaning of the superimposed depictions have been lost, in

part owing also to the restoration which destroyed additional details. Instead of proposing yet another interpretation, we would prefer to highlight a few minor points.[1]

Let us begin with the composition on the main, frontal side. It seems to us that Rezi Kató's interpretation that the scene is framed by a simple rectangular building, perhaps a sanctuary, and that the human figure is portrayed as standing in a closed space, can be rejected. Although many details have been lost during the millennia, there is nothing to suggest that the incised Y-motifs were connected with lines or that the Y-motifs can be regarded as the purlins supporting the building (Rezi Kató 2001: 122).

Marija Gimbutas quoted the human depiction of the Cucuteni–Tripolye culture as the best formal parallels to the human figure appearing on the short front side, i.e. the side that can be regarded as central (Gimbutas 1989: Fig. 373: 1–2, Fig. 378: 1–4).

Rezi Kató regarded the figurines of the late Cucuteni–Tripolye (Usatovo) culture as possible parallels owing to the rectangular form of the head and the emphatic modelling of the nose (Rezi Kató 2001: 122).

It seems to us that the human figure from Szelevény compares best with the portrayals of the Vučedol culture (Fig. 2: 1). The base fragment of a vessel discovered at Vučedol–Vineyard Streim in 1894 bears a depiction of a human figure with upheld hands enclosed within a circle (Hoffiller 1933, T. IX:7). The circle framing the human figure and the human figure itself (whose body was created from two triangles set tip to tip, while the legs were indicated by simple lines and the head with a dot, all elements resembling the ones from which the human figure on the Szelevény vessel was created) were made with a technique resembling the one used at Szelevény: the deeply incised lines were filled with stabs. In his study on this vessel fragment, Aleksandar Durman identified the human figure with the figure outlined by the Orion constellation. He noted that the vessel fragment may in fact have been a lid fragment and in this case, the figure would have been more prominent because its function as a decorative element, especially one vested with a symbolic meaning, would have been lost on the vessel base or, better said, would hardly have been visible. Orion being the brightest and most prominent constellation of the winter sky, symbolised winter to prehistoric man. It was excellently suited to measuring annual cycles and thus became an important constituent of simple calendars (Durman 2000, 78–83).

Other, very close parallel is from Kostolac culture (Fig. 2:2). A shard of a ceramic vessel with a furrow-incised human figure was found at site Đakovo–Franjevac in 2007 (Balen 2011, 96, Fig. 4: 8). The site of Franjevac is an open-air, single layer settlement, with horizontal stratigraphy. The cultural layer has nowhere remained preserved and, even if there had been any, it was presumably destroyed by agricultural works. A total of 1040 contexts were documented during the investigation, consisting of layers (humus, plough-layer and geological layers) as well as fills and cuts of pit features. Out of the total number of pits the highest percentage belonged to features without pottery finds (223), most of which were post-holes (around 1.20 m in diameter) or stake-holes (with a diameter between 0.40 and 0.60 m), filled with loose, brown fills, and small elongated features (channels) with daub and traces of charcoal. A total of 142 features yielded Eneolithic pottery of the Kostolac culture, while medieval finds were discovered in 119 pits.

The fragment with human figure was found in the pit (stratigraphic unit 51), two meters deep and with 2.5 meters in diameter. The pit is round and wider toward the bottom, which probably originally served as storage space. A pit was not rich with waste material as some others from Franjevac were. A total of 99 fragments of pottery were found in it, as well as one copper awl.

The possible interpretations of the depiction from the Late Copper Age

Finally, we would like to draw attention to another aspect of the depiction. Without entering the maze of earlier interpretations on the meaning of various sets of symbols – e.g. whether the human figure is male or female (suffice it here to assert that it is human), whether the impressed dots represent scattered seeds or rainfall, whether the Y-motifs are purlins or leafy trees – what must by all means be emphasized is that the scene, as a whole, is an anthropogenic portrayal of the environment. Man was not simply present in this environment, but also played an active role in shaping it. Very few contemporary compositions of this type are known from Europe.[2]

[1] The secondary mounted Brillen-spiral on the back side can not help in the dating, because this type of jewel or decoration on a jewel occured from the Middle Copper Age/*Früh- und Hochkupferzeit* till the end of the Middle Bronze Age/Reinecke B-C (Matuschik 1996).

[2] A wall painting showing a schematic map of the village and the nearby volcano is known from Çatal Höyük, dating from a much earlier period (7th–6th millennium BC).

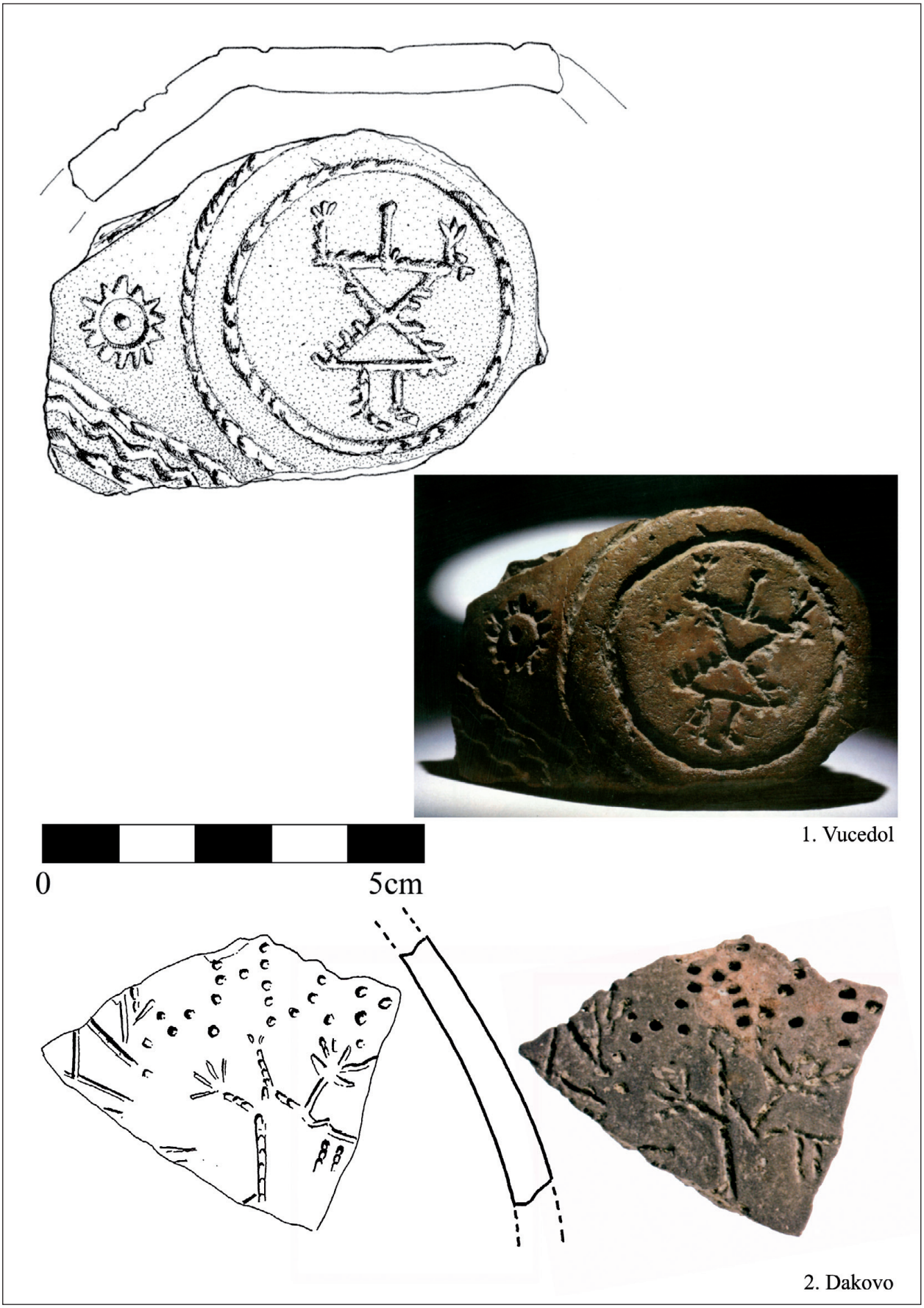


Fig. 2. 1. Vessel with human depiction from Vučedol (drawing by Miljenka Galić, photo after Durman 2000, Fig. 45); 2. Đakovo–Franjevac (drawing by Krešimir Rončević, photo after Balen 2011, 96, Fig. 4: 8).

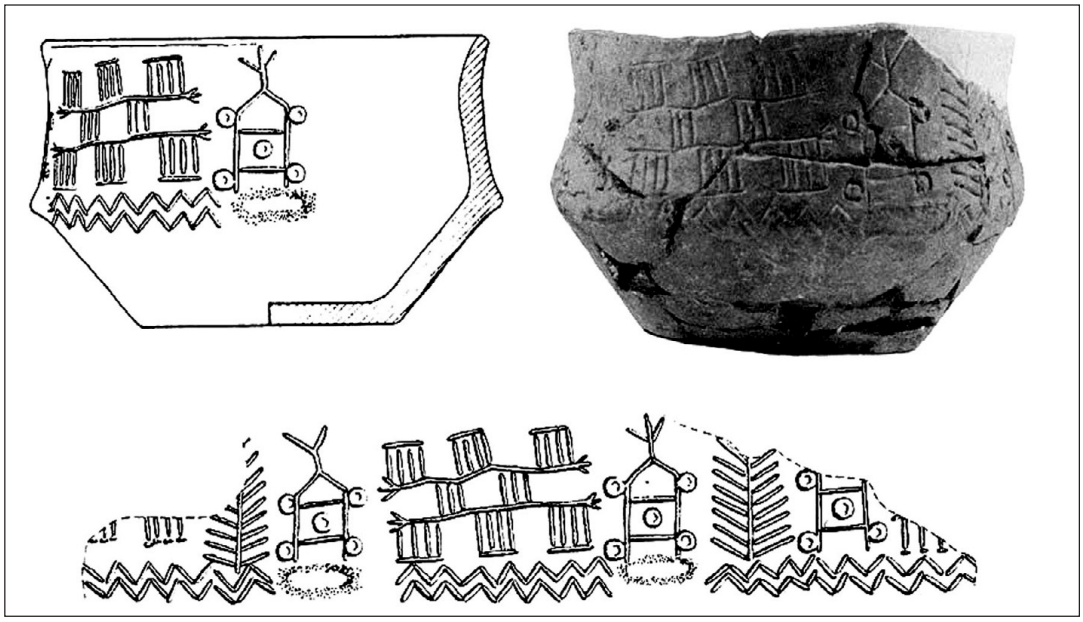


Fig. 3. The vessel from Bronocice (after Piggott 1983, Fig. 11).

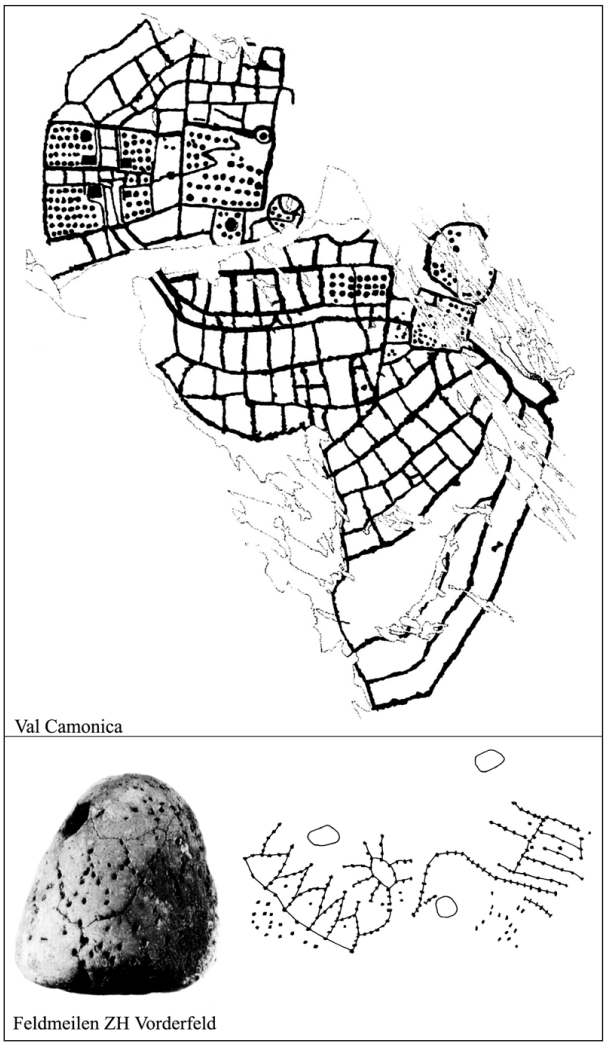


Fig. 4. 1. Depiction of fields on a rock engraving from Val Camonica (Pescarzo/Giadeghe) (after Pétrequin–Pétrequin–Bailly 2006, Fig. 27); 2. Depiction of Feldmeilen ZH Vorderfeld on a clay loom-weight (after Leuzinger 2000, Abb. 260).

One of these is the depiction on a vessel from Bronocice, interpreted as a ritual scene accentuated by the presence of a wagon (Fig. 3). The scene on the small, 10.5 cm high biconical cup recovered from a pit of a Funnel Beaker settlement is usually interpreted as follows: the two zigzag lines around the base imitate water, while the central design depicts a causeway separated by wagons and trees flanked by fields. The vessel is generally dated to 3637–3373 cal BC with a median of 3520 cal BC (Piggott 1983: 41; Milisauskas & Kruk 1991: 564, Fig. 3; Bakker *et al.* 1999: 784).

Another is a rock engraving from Val Camonica (Fig. 4.1.), showing the map of a village and the surroundings fields and pastures (Pescarzo/Giadeghe, Val Camonica: Pétrequin *et al.* 2006: Fig. 27).

Perhaps similar imagination can be seen on the clay loom-weight of Horgen culture, from Feldmeilen ZH Vorderfeld (Fig. 4.2): a house-line with sun, and fields, routs, and palisade, belong to the village (Leuzinger 2000: 170, Abb: 260).

In terms of its design concept, the vessel from Szelevény is best matched by the three depictions quoted above. Obviously, each was made for a different occasion and their designs were inspired by different beliefs. They come from different cultures lying at great distances from each other. Their single shared trait is that they were most likely made for ritual purposes and that they all portray a settlement and its inhabitants, and can thus be interpreted as the mental projection of a spatially well-defined smaller unit. The depiction of parcelled fields with well-defined boundaries in all three cases is an especially intriguing element, perhaps reflecting the

replacement of communal land with well-defined, separate and perhaps inheritable, privately owned fields.

The single perfect analogy to the ritual artefact from Szelevény regarding both the vessel form and the depiction was a find from Gomolava (Fig. 5.1). Unfortunately, the Gomolava find is only a corner fragment, although with a larger portion of the long wall, decorated with a double zigzag line combined with stabbed dots. The triangle with open

Fig. 5. 1. The vessel from Gomolava (photos by courtesy of Jovan Koledin, Museum of Vojvodina); 2. Đakovo–Franjevac (drawing by Krešimir Rončević, photo after Balen 2011, Fig. 4: 3).

upper part is generally interpreted as a female lap or womb, a simple portrayal of the Earth Goddess (Fettich 1969: 36; Rezi Kató 2001: 123). The main design was created with stabbed dots. This particular fragment matches the two longitudinal sides of the vessel from Szelevény both in terms of its form and decoration. The short side is decorated with stabbed dots over its entire surface. There are no other depictions on the fragment, suggesting that it was not the main front wall, but the rear one. The fragment was brought to light from Layer IV, an occupation level of the Kostolac culture (Petrović & Jovanović 2001: 270).

Another analogy for vessel type comes again from Kostolac culture site Đakovo–Franjevac (Fig. 5.2). There are several fragments of rectangular vessels in the ceramic assemblage from Franjevac, this vessel type has a flat base and short vertical body, with matt or polished surface. One vessel of this type stands out, with suspension loops and decorated with furrow incision (Balen 2011: 96, cat. no. 10, Fig. 4: 3). Those suspension loops suggest that most probably it was a hanging vessel. This hanging vessel was also found in a pit (SU 355 in SU 20). Stratigraphic unit (pit) No 20 was irregular in shape, length 7 m, and width 5 m, a depth of up to 0.70 cm. The pit was oriented northeast–southwest. There are three ovens or places where there were quite intense traces of burning. Ovens (SU 351,353,356) were slightly dug in the soil. Pit contained several fills with large quantities of clay objects – pottery fragments, everyday functional objects like biconical and conical ceramic spindle-whorls and spoons, but also some more object which can also be connected with some cult activities, like fragment of saddle-type altar and small clay axe.

In view of the exact stratigraphic context and secure cultural attribution of the virtually identical vessel fragment from Gomolava and Đakovo–Franjevac, it seems a reasonable suggestion to discard the attribution of the Szelevény vessel to the Hunyadihalom culture of the late Middle Copper Age and instead date it to the Transitional period between Late Copper Age and the Early Bronze Age, and to assign it culturally to the Kostolac culture in view of that fact that the best analogies to the form and the decoration of the Szelevény vessel are known from the so-called post-Baden Kostolac and Vučedol cultures in Croatia. The closest parallels to the Szelevény find have the same chronological and cultural position in the Kostolac culture. The similar decorative patterns and techniques, as well as artefact types of the Vučedol culture suggest that the Kostolac and Vučedol cultures were contemporaneous and that there was interaction between them, as has already been suggested (Petrović & Jovanović 2002; Balen 2005a, 2011). Perhaps similar rectangular vessel from the same period and culture-circles known from Dunapentele, Hungary (stray find: Patay 1938: 40, IV: 10-b).

The distribution and chronological position of the so-called post-Baden Kostolac culture in Hungary and in Croatia (Map 1–2–3.)

Hungary

It must in all fairness be noted that not one single find or site of the Kostolac culture is known from Szelevény. The nearest sites from the Great Hungarian Plain yielding Kostolac pottery lie in the Tiszazug area, at Alattyán and Tápiószele (Bondár 1984: Abb. 6: sites 6 and 54).

Before mapping the distribution of the Kostolac culture, we have to re-examine the Kostolac sites and finds. First, it must be emphasized that most of the so-called Kostolac sites in Hungary (and perhaps Slovakia and Austria as well) are not independent Kostolac sites, but Baden sites with Baden and Kostolac finds in one feature or Kostolac finds in Kostolac features uncovered on a Baden settlement. Kostolac finds are often found mixed with Baden finds in Baden settlement features on sites which lack independent or genuine Kostolac features. In a few cases, we uncovered Kostolac urn graves in a separate area in close proximity to a Baden settlement, although it could not be established whether the area was part of the Baden settlement or not: these were independent Kostolac features and vessels, perhaps suggesting the presence of a Kostolac community, but in every case, these find were associated with Baden settlements.

– List of Kostolac sites in Hungary:

Alattyán–Kiskert, Ároktő–Tiszadorogma, Balatonboglár–Berekre dűlő, Bátmonostor, Bodrogkeresztúr, Budakalász–Pusztatemplom, Budapest–Békásmegyer, Csongrád–Felgyő, Deszk–A, Dunabogdány, Dunaszekcső–Várhegy, Hódmezővásárhely–Bodzáspart/Szenti tanya/Kopáncs, Kalocsa, Kecskemét–Szikra, Keszthely–Fenékpuszta, Kiskőrös, Lakitelek–Szikra, Nagykanizsa–Inkey kápolna, Onga, Ordacsehi–Major, Ószentiván–Tiszasziget/VII, Ózd–Center–Kőfej alja, Palotabozsok, Pécs–Makár/Makáralja/Vasas, Sárisáp, Szentendre–Pannonia telep/Papsziget, Szentes–Nagyhegy, Szigetcsép–Tangazdaság, Szigetmonostor–Dunapart, Szigetszentmiklós–Üdülősor, Szurdokpüspöki–Hosszúdűlő, Tahitótfalu, Tápé–Lebő,

Üllő; Balatonőszöd–Temetői dűlő (Kostolac-like finds brought to light on a Boleráz–Baden settlement: Horváth 2011, 2012 in print). The westernmost known Kostolac site is Szombathely–Bogácai ér (Ilon 2004: 46).

– List of Kostolac sites in Slovakia: Iža/Izsa, Trenčin/Trencsén, Radzovce/Rágyóc;

– List of Kostolac sites in Austria: Ossarn, Lichtenwörth;

(lists on the base of Banner & Kutzián 1960, Banner & Kutzián 1961, Bondár 1984 and Banner 1956 completed with Bondár 1996, 1998; Ecsedy 1984; Korek 1984; Ilon 2004; Siklósi 2004; Bácsmegi & Sümegi 2010).

The above cultural attributions may be incorrect because none of the sites have been fully excavated. Also, a final report on the features and their finds is still lacking and very often only a selection of the Kostolac and/or Baden finds from a same feature were published.

The finds from many of the Kostolac sites appearing in the above list could equally well be attributed to the Baden culture: white lime incrustation filling the stabbed motifs on the vessel surface (generally on bowls) and the double horizontally incised lines on vessel shoulders is not exclusive to Kostolac wares (Stapelfeldt 1997), but also appears on Baden vessels (e.g. Szentendre–Pannónia dűlő: Banner 1956: P. XXXV: 2, 6, or Szentes–Nagyhegy: Banner 1956: P. LIX: 8–9, P. LX: 1–2, 9).

Seemingly independent Kostolac sites have been reported from Szigetcsép–Tangazdaság and Szurdokpüspöki–Hosszúdűlő (but they can be connected to Baden culture also, just the excavation did not proof it).

Independent Kostolac urn graves have been found on the outskirts of Baden settlement at Keszthely–Fenékpuszta and Balatonboglár–Berekre dűlő.

Palotabozsok: it is uncertain whether it was a multiple inhumation burial on a Baden settlement yielding Kostolac finds mixed with Baden finds.

Dunaszekcső: this is hardly an independent Kostolac site because the finds came from a private collection without any documentation whatsoever. The finds can therefore be regarded as stray finds.

The two sites at Szigetcsép–Tangazdaság and Szigetszentmiklós–Üdülősor appear to be associated with Early Bronze Age Bell Beaker sites, but the connection between them is uncertain.

– List of Vučedol sites in Hungary (Map 3):

Dunaszekcső–Várhegy, Zók–Várhegy, Somogyvár–Kupavárhegy, Döbrököz–Tűzköves, Gyulaj–Bányahegy, Lánycsók–Égettmalom, Pécs–Nagyárpád (Kulcsár 2009: 249–252). With the exception of Lánycsók these are hilltop settlements on which Somogyvár–Vinkovci features/layers were documented. It is unclear whether there was any connection between the Baden and Vučedol, or later the Vučedol and Somogyvár–Vinkovci features because the currently available evidence is insufficient for resolving this issue. The published radiocarbon dates from Zók–Várhegy, Nagykanizsa and perhaps Neusiedl am See placed the Hungarian Vučedol sites between 2900–2500 cal BC (Bln-3309, Bln-3310, ETH-25186, VERA-2213, Bln-1633: Della Casa 1995: 572; Ruttkay 2002; Forenbaher 1993: 241), and we know some Baden radiocarbon dates from Transdanubia at the same time, but other sites.

There is need for a re-examination and re-assessment of the above-mentioned "Kostolac" finds based on the published data (Map 1). This is no easy task because some of the finds come from old excavations without a stratigraphic context or any kind of documentation, some are lost, and some are simply inaccessible because the excavators do not permit a study of a site and its finds. In many cases, all we have are the publications, but often the cultural attribution of a particular vessel is impossible from the black and white, low resolution photos or drawings. Moreover, many find are not illustrated or described.

Why is this so important? One important finding of the assessment of the pottery finds from Balatonőszöd–Temetői dűlő, the largest Late Copper Age settlement excavated in Hungary to date, was that the Kostolac vessels were not genuine Kostolac wares, but simply Kostolac-like (Horváth 2011, 51–52). This raises the question of how the Kostolac finds from the so-called Kostolac sites in Hungary and Slovakia should be evaluated.

The relative and absolute chronology and the typology of the Balatonőszöd site indicates that Kostolac-like finds appeared early in the Baden sequence, specifically from the IB-C Boleráz–Baden IIA transition period, suggesting that Kostolac was not a post-Baden culture on its whole distribution area, as previously believed (e.g., Pétrequin *et al. eds.* 2006; Horváth 2009, 112–113.), but that its development was simultaneous with the formation of the Baden culture from the end of the Boleráz. It is therefore incorrect to describe Kostolac as a "post-Baden culture". The available radiocarbon dates support this observation (Table 1).

In the light of the former supposed linear Baden–Kostolac–Bell Beaker sequence in Pest county (environment of Budapest) the chronology of the Baden cemetery at Budakalász–Luppa csárda is between 4510 and 4170 BP (closed around 2740 cal BC: Sik-

lósi 2009), Ecser 6–Maglód 1 Baden sites ended in 4400 BP (around 2900 BC, unpublished, excavation of Róbert Patay). The two available ^{14}C date of Szigetcsép–Tangazdaság Bell Beaker settlement are 4030 BP and 3970 BP (2835–2470 and 2575–2410 cal BC, Forenbaher 1993: Bln-1638, 1639), other unpublished dates from the Budakalász and Szigetszentmiklós Bell Beaker cemeteries begin 2500 BC (excavation of Róbert Patay and András Czene).

Comparing other cultures with the only Kostolac date of Szigetcsép (4350 BP, 3015–2905 cal BC, Table 1) we can assume partial symbiosis of the Baden and Kostolac cultures or pottery styles in the environment of Budapest, and later, with a gap, the presence of the Bell Beaker culture in the Early Bronze Age 2 period. Similar situation can be observed in the southern shore of the Lake Balaton region instead of Bell Beaker with the Somogyvár–Vinkovci culture (Horváth 2009, 2012 in print).

If other Hungarian finds also turn out to be merely Kostolac-like rather than genuine Kostolac wares, this raises the question of whether Kostolac should be interpreted as a culture or simply as pottery style distributed in Hungary, Slovakia and Austria. In order to resolve this issue, we have to study sites in their entirety (both the features and their finds) in order to determine the proportion of Baden and Kostolac finds in one feature and on one site.

Croatia

The Croatian sites – 55 of them at present – represent in most cases occasional finds consisting of a few pottery shreds, or trial trench excavations (Balen 2002, 2011). Excavations are made just on 16 sites, and on 3 sites Kostolac finds are found mixed with Baden finds in Baden settlement features. Systematic investigations were carried out at Vučedol near Vukovar, Sarvaš near Osijek, Lijeva bara in Vukovar and Slavča near Nova Gradiška. Unfortunately, the bulk of the Kostolac artefacts from Vučedol and Sarvaš come from old excavations, when the Kostolac culture still had not been recognized as a separate manifestation, and its artefacts were ascribed to the Baden culture. Recent excavations at Vučedol–vineyard Streim provided clues on economy as well as a confirmation of the Baden–Kostolac–Vučedol continuity. A layer of the Kostolac culture with building features was established there (Balen 2005b).

The investigations carried out as part of large infrastructure works at motorway routes and also on course of the main gas pipelines resulted in the discovery of the remains of Kostolac settlements: at Franjevac in Đakovo (Balen 2011), at Verušed in Petrijevci (Filipec *et al.* 2009: 47), at Kaznica near Đakovački Selci (Hršak & Pavlović 2007: 17), at Jaruge–Gođevo Berava, at Kruščik near Pleternica (Mihaljević 2010a) and at Vidovci–Rosulje near Požega (Mihaljević 2010b). However, none of these investigations covered entire settlements, but only parts of them, so we cannot answer the question about the way the settlements of the Kostolac culture were organized, i.e. whether they were characterized by intra-settlement specialization or the activities were divided within households.

Topographic features of documented Kostolac settlements have shown certain regularities in the selection of positions for building settlements. All the settlements were built next to larger or smaller watercourses that provided certain preconditions for living. The density of settlements indicates that these were probably generally smaller settlements, with few larger ones that exerted control over a wider area. In the area of Slavonia and Syrmia the settlements were erected on natural elevations near rivers. The most common type of site of the Kostolac culture are settlements with a single occupation horizon. There are few settlements of the tell type, such as Vučedol and Sarvaš.

– List of Kostolac sites in Croatia (Map 1, 2):

Aljmaš–Podunavlje (Baden–Kostolac–Vučedol), Ašikovci–Vražjak, Bobota, Bogdanovci–Voćnjak (Baden–Kostolac–Vučedol), Cerić–Plandište, Dalj–Ciglana, Dalj–Lisova skela, Dalj–Savulja, Donja Bebrina–Paljevine, Donja Vrba–Saloš, Đakovo–Grabrovac, Đakovo–Franjevac, Erdut–Veliki Varod, Erdut–Panića skela, Gornja Bebrina–Okukalj, Ilok–Tvrđava, Ilok–Božino brdo, Jaruge–Gođevo Berava, Kaznica–Rutak, Kešinci, Klisa–Ekonomija, Kozarac–Ciglana, Kruščik, Kršinci–Okruglica, Lovas–Gradac (Baden–Kostolac–Vučedol), Nova Gradiška–Slavča, Orolik–Vinogradi, Osijek–Retfala (Baden–Kostolac–Vučedol), Petrijevci–Verušed, Petrovci–Brođanka, Potočani–Mali Grad, Razbojište–Široko jutro, Rokovci, Samatovci–Pusta, Sarvaš–Gradac (Baden–Kostolac–Vučedol), Stari Jankovci–Gatina, Sotin–Fancage, Sotin–Srednje polje, Šarengrad–Ađinac, Šarengrad–Bišket, Šarengrad–Gradac, Šarengrad–Kuruzeb, Šarengrad–Luketinec zapad, Šarengrad–Renovo, Tovarnik, Vidovci–Rosulje, Vinkovci–Marica, Vinkovci–Ervenica, Vukovar–Budžak, Vukovar–Lijeva bara, Vučedol–Gradac (Baden–Kostolac–Vučedol), Vučedol–vinograd Streim (Baden–Kostolac–Vučedol), Vučedol–kukuruzište Streim (Baden–Kostolac–Vučedol), Zvizdan–Lovačka kuća (Balen 2002, 2010).

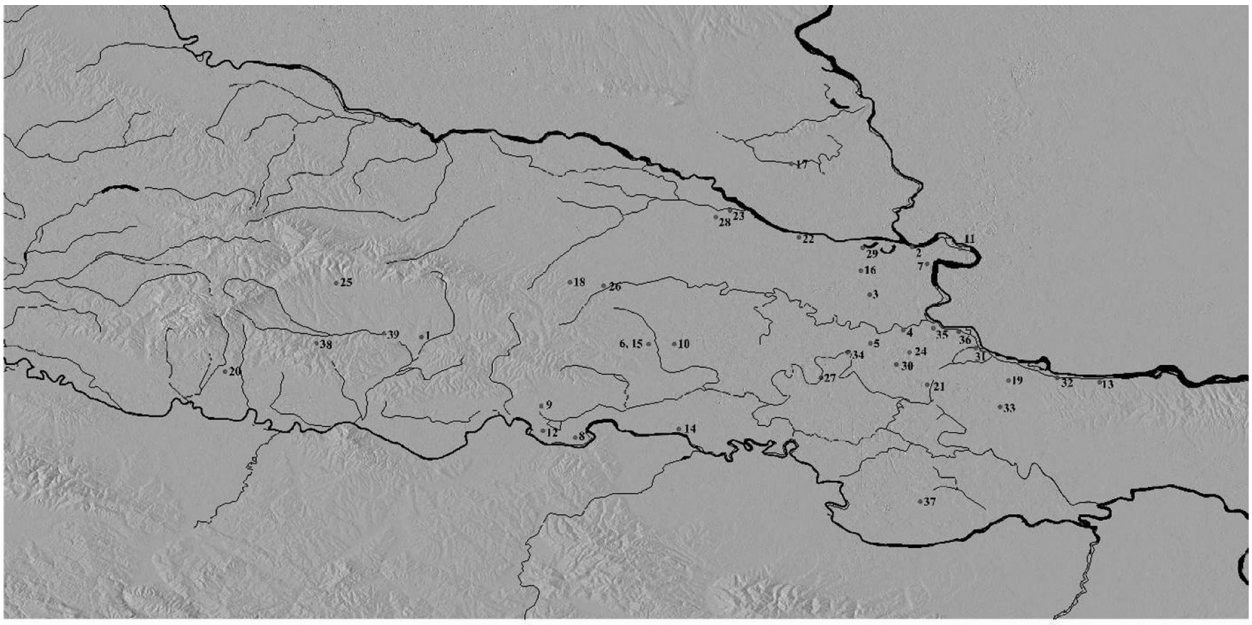
Urn grave: Ilok.

Inhumation graves: Đakovo–Franjevac, Kaznica, Osijek (Baden or Kostolac?), Sarvaš (Baden or Kostolac?), Vučedol (Baden or Kostolac?).

Map 1.

Key: rectangular blue: urngrave; rectangular yellow: skeleton grave; dot purple: Kostolac site with EBA Bell Beaker; dot yellow: independent Kostolac site; dot red: Kostolac site mixed with Baden; dot grey: Kostolac-Coțofeni; red dot with coma: Baden-Kostolac-Vučedol; blue dot with coma: Kostolac-Vučedol; grey: Kostolac-Coțofeni common sites.

Map 1. Spatial distribution of Kostolac or Kostolac-like sites in Austria, Slovakia and Hungary.



1. Ašikovci, 2. Aljmaš, 3. Bobota, 4. Bogdanovci, 5. Cerić, 6. Đakovo, 7. Dalj, 8. Donja Bebrina, 9. Donja Vrba, 10. Kešinci, 11. Erdut, 12. Gornja Bebrina, 13. Ilok, 14. Jaruge, 15. Kaznica, 16. Klisa, 17. Kozarac, 18. Kršinci, 19. Lovas, 20. Nova Gradiška, 21. Orolik, 22. Osijek, 23. Petrijevci, 24. Petrovci, 25. Potočani, 26. Razbojište, 27. Rokovci, 28. Samatovci, 29. Sarvaš, 30. Stari Jankovci, 31. Sotin, 32. Šarengrad, 33. Tovarnik, 34. Vinkovci, 35. Vukovar, 36. Vučedol, 37. Zvizdan, 38. Krušćik, 39. Vidovci

Map 2. Spatial distribution of Kostolac sites in Croatia (by Ana Solter).

From Croatia we have absolute dates only from the sites of Vučedol–Streim Vineyard, Đakovo–Franjevac (Table 1) and unpublished dates from Slavča and Kaznica–Rutak, and they all range in the period between 3350 and 2800 BC.[3]

- For the Kostolac territory-part in Serbia and Bosnia see: Nikolić 2000 (Map 1):

Urn graves: Đerdap, Dvorovi.

Inhumation graves: Bogojevo, Dobanovci, Gomolava, Skorenovac.

There are few dates from Serbia and Bosnia: the dates from Gomolava range between 3108–2877 BC (Petrović & Jovanović 2002: 298), a date obtained from Rudna Glava is 2910–2880 BC (Borić 2009: 198), from Belovode 3130–2920 BC (Borić 2009: 208), while those from Pivnica range from 3356 to 2857 BC (Petrović & Jovanović 2002: 298).

– List of joint sites of Kostolac and Coțofeni cultures (Map 1):

Bogovinska pećina, Bubanj, Crnajka–Pjatra Kosti, Čot–Popović, Jelenac, Jezero, Kasidol–Požarevac, Klokočevac–Culma Sciopului, Kljanc, Krivelj, Lepenska potkapina, Manastir–Gospodjin Vir, Padina, Rečica–Malo Golubinje, Smiljkova glavica–Štubik, Stenje–Turija, Vlasac, Zlotsku pećina (after Spasić 2010). The joint sites are concentrated in the Danube/Iron Gates–Timok–Crni Timok–Morava area. At present, there are no radiocarbon dates available for the joint sites.

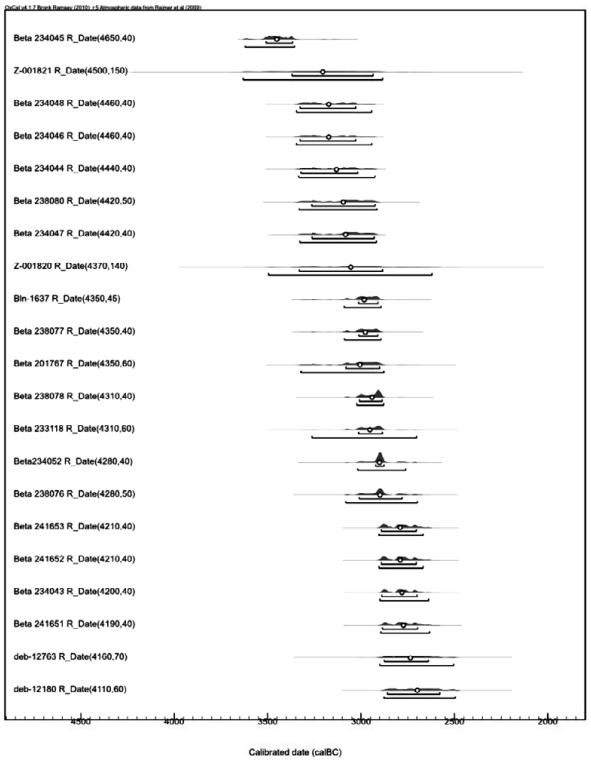


Fig. 6. Calibrated probability distributions of the radiocarbon dates of the Kostolac samples from Hungary and Croatia and a possible combined calibration.[4]

[3] We sincerely thank T. Hršak and M. Mihaljević for their personal communication.

[4] Calibration made by Éva S. Svingor, thanks for her cooperation!

Table 1. Available radiocarbon dates of Kostolac culture from Hungary and Croatia.

Lab. ID.	Site name, feature	δ ^{13}C	Conventional BP	Calibrated BC 1 σ	Calibrated BC 2 σ
Bln-1637	Szigetcsép–Tangazdaság	?	4350 ±45	3015–2905	3095–2890
deb-12180	Vörs–Máriaasszony sziget, Pit No. 75, animal bone	-21.0	4110 ±60	2860–2575	2880–2495
deb-12763	*Vörs–Máriaasszony sziget, Pit No. 53, charcoal*	*-25.2*	*4160 ±70*	*2880–2635*	*2900–2500*
Beta 201767	*Vučedol–vinograd Streim, sonda V-87, Pit 60, charcoal*	*-18.9*	*4350 ±60*	*3085–2900*	*3325–2875*
Z-1820	*Vučedol–vinograd Streim, sonda V-85, Pit 32, charcoal*	*?*	*4370 ±140*	*3335–2885*	*3500–2620*
Z-1821	*Vučedol–vinograd Streim, sonda V-85, Pit 103, charcoal*	*?*	*4500 ±150*	*3370–2935*	*3635–2880*
Beta 234048	*Đakovo–Franjevac,SJ 51, charcoal*	*-26.3*	*4460 ±40*	*3330–3025*	*3350–2940*
Beta 238080	*Đakovo–Franjevac, SJ 51, charcoal*	*-25.0*	*4420 ±50*	*3265–2925*	*3335–2915*
Beta234052	*Đakovo–Franjevac, SJ 160, charcoal*	*-26.0*	*4280 ±40*	*2925–2875*	*3020–2760*
Beta 234044	Đakovo–Franjevac, SJ 160, animal bone	-20.7	4440 ±40	3325–3015	3335–2925
Beta 234045	*Đakovo–Franjevac, SJ 160, charcoal*	*-24.1*	*4650 ±40*	*3510–3365*	*3625–3355*
Beta 233118	Đakovo–Franjevac, SJ 578-161, animal bone	-20.6	4310 ±60	3015–2885	3265–2700
Beta 241652	Đakovo–Franjevac, SJ 1040-161, tooth	-19.6	4210 ±40	2895–2700	2905–2665
Beta 234043	*Đakovo–Franjevac, SJ 371-20, charcoal*	*-25.2*	*4200 ±40*	*2890–2700*	*2900–2635*
Beta 234046	*Đakovo–Franjevac, SJ 369-20, charcoal*	*-26.6*	*4460 ±40*	*3330–3025*	*3350–2940*
Beta 238078	*Đakovo–Franjevac, SJ 368-20, charcoal*	*-25.4*	*4310 ±40*	*3010–2885*	*3025–2875*
Beta 234047	*Đakovo–Franjevac, SJ 876, charcoal*	*-25.8*	*4420 ±40*	*3265–2930*	*3330–2915*
Beta 238076	*Đakovo–Franjevac, SJ 249, charcoal*	*-25.8*	*4280 ±50*	*3010–2780*	*3085–2695*
Beta 238077	*Đakovo–Franjevac, SJ 267, charcoal*	*-23.4*	*4350 ±40*	*3015–2910*	*3090–2890*
Beta 241653	Đakovo–Franjevac, SJ 850-306, human bone	-19.9	4210 ±40	2895–2700	2905–2665
Beta 241651	Đakovo–Franjevac, SJ 939-266, human bone	-20.1	4190 ±40	2890–2695	2895–2630

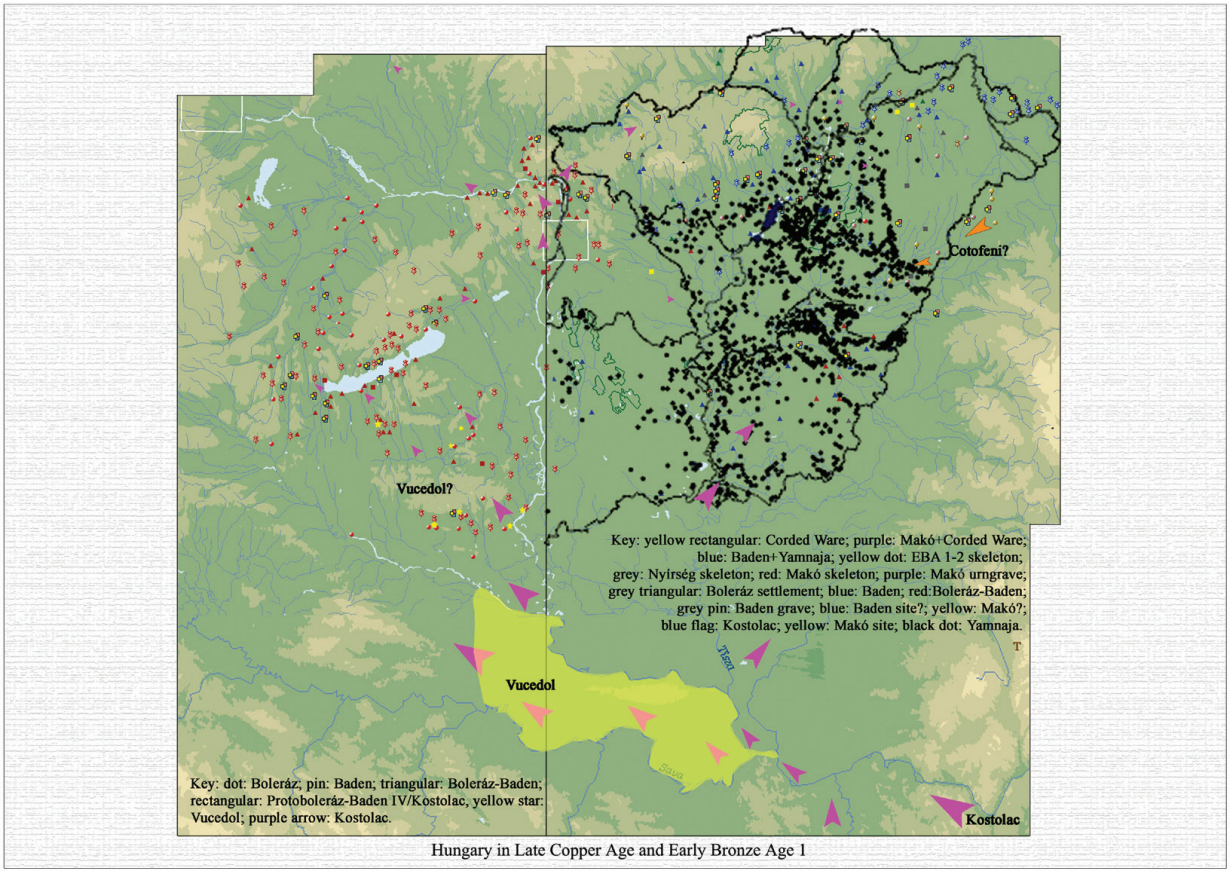
italic; old-wood effects: the dates show older than their real age, must need reservoir correction, after Balen 2011: Tab. 13.1

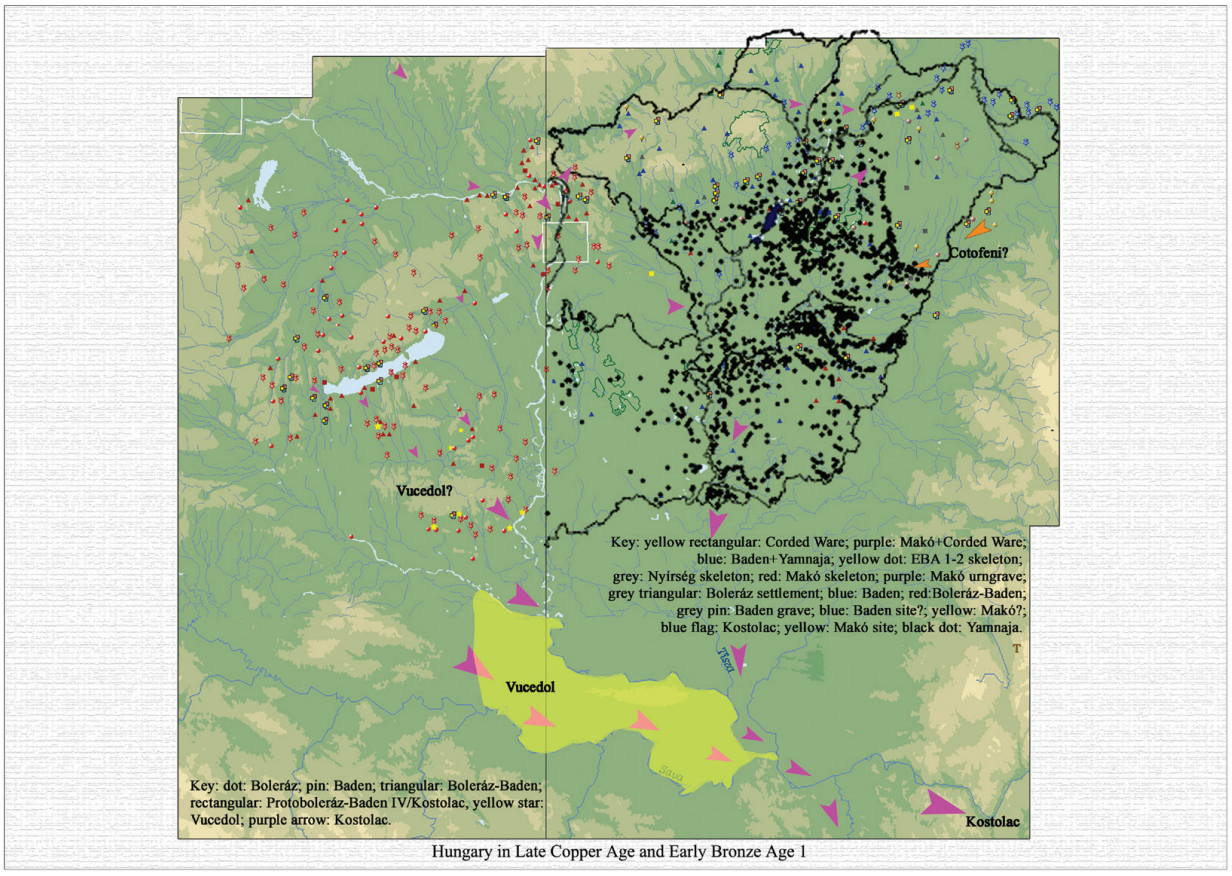
Summary

The main purpose of the present study was not to decipher the ritual vessel's design, probably incorporating religious symbols, but rather to call attention to the fact that it appears to have been a growing interest in the visual portrayal of the human perception of the environment (in part shaped by human activities), reflected by the appearance of various depictions of these environments in ritual contexts in different parts of Late Copper Age Europe.

The rectangular vessels of the Kostolac culture surely were not a wagon model (as Stefan Burmeister suggested: Burmeister 2011: 221, Abb. 16.), but a hanging vessel for some kind of ritual purpose. Analogous finds suggest that it may have been a hanging altar for burning and/or smoking sacrifices. Earlier, two dimensional similar finds with higher central sides, such as the specimen from Ovčarovo, were interpreted as a calendar system (Nikolov 1998).

We have to distinguish genuine Kostolac wares from Kostolac-like finds across the entire distribution of these finds, especially in the mixed territory of Slovakia, Austria and Hungary. It is possible that many Hungarian finds assigned to the Kostolac culture are not genuine Kostolac wares but simply Kostolac-like finds, suggesting that it would be more accurate to speak of a Kostolac pottery style rather than the Kostolac culture in Hungary. The relative and absolute chronology of the Kostolac culture needs to be re-assessed and its chronological position as a post-Baden culture can be discarded. The Kostolac culture can be assigned to the conventional Late Copper Age, spanning the period between 3350 and 2800 BC, the end of





Map 3.Possible direction of the distribution of Kostolac culture or pottery style.

the Late Copper Age. A few late Kostolac dates (if they can in fact be associated with Kostolac) indicate that the Kostolac culture survived until the beginning of Early Bronze Age (until 2600 BC?). The Kostolac development was partly parallel with the Baden sequence during the Late Copper Age and with the Vučedol culture during the transition from the Late Copper Age to the Early Bronze Age (2800–2600 BC), explaining why the three cultures have many mixed sites and similar vessel forms, decorative patterns, common rites, particularly in the distribution of the independent Baden, Kostolac and Vučedol cultures along the Danube in the Srijem, the Banat and the Bačka regions.

It seems to us that the beginning of the Kostolac culture or pottery style should be placed in the middle of the Late Copper Age (3350 BC), especially in view of the *Furchenstich*-like decorations on the vessels, which links Kostolac to the close of the Middle Copper Age. This decorative technique perhaps indicates its northern origin, as proposed earlier by A. Benac (1962) (Map 3). Some newcomer ritual vessel form appeared in the Kostolac culture compared with the Baden can explain with the location of the independent, genuine Kostolac territory since Baden and Kostolac territory were not the same (Horváth 2009). It was southwards from the Baden, on the northern margin of the Balkan Peninsula, closer in time and space to the cradle of the traditional Neolithic/Chalcolithic Southeastern-European cultures with great ritual activities (Hansen 2001, 2007).

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