REPAIR AND CURATION OF LATE NEOLITHIC THREE-COLOURED POTS: INSIGHTS FROM THE SITE OF PAVLOVAC-ČUKAR, SOUTHERN SERBIA

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Three-coloured vessels, usually called *black-topped* pottery, are widely known from a vast geographical area (from Egypt and Sudan, the Near East, the Balkans, and even India) and from a wide chronological span – from the Neolithic to the Protohistorical periods. Despite several experiments (Hendrickx *et al.* 2000; Bintintan and Gligor 2018; Vuković 2018a), the technology, i.e. firing procedure, is still to a great extent unknown. However, researchers agree that these vessels were fired in a combined atmosphere, where some parts of the pots were exposed to oxidising conditions, while other parts were (assumed to be) pressed into the ashes or wrapped in wet leaves during firing, in order to achieve blackening of the surface in a reducing atmosphere. On the other hand, firing installations are still unknown: some researchers assume the presence of kilns (Hendrickx *et al.* 2000; Bintintan and Gligor 2018), despite the absence of such structures in the archaeological record, while others consider the use of a bonfire as a more probable solution (Bonga 2013; Kalogirou 1994; Vuković 2018a).

Black-topped pots are one the most remarkable features of the earliest phases of the Late Neolithic Vinča culture of the Central Balkans (Garašanin 1979). They include bowls, and more often pedestalled vessels usually called 'goblets'. In contrast to bichrome (black and red) black-topped vessels from modern Bulgaria and Greece, they exhibit three colours: a black upper part, a yellowish-beige central part, and a red lower part. The different coloured zones on the pots are usually distinctly divided, with clear horizontal margins (Figure 1). The central, yellowish-beige zone of the pots, being regular and in clearly defined bands, does not appear to be the consequence of combined firing conditions, as has been suggested (Kalogirou 1994, 88), but it was more probably executed deliberately. Moreover, lower, yellow and red parts of the pots were slipped.

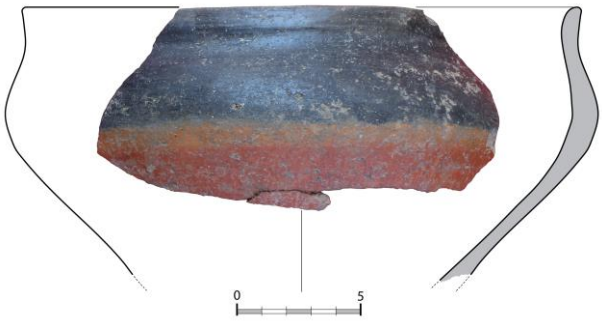

Figure 1. The different coloured zones on the pots are usually distinctly divided, with clear horizontal margins.

The use of coating of iron-rich clay on Vinča pots is already confirmed (Spataro 2018). Although the effect of the slip coating in producing a polychrome effect has not yet been experimentally tested, it can be assumed that clear horizontal boundaries between the zones of different colours may have been the result of the coating application, thus achieving a better control over their distribution.

During the rescue excavations at the site of Pavlovac-Čukar (Figure 2) in southern Serbia in 2011, several specimens of three-coloured black-topped vessels were found. In most cases, they were found in surface layers, disturbed by modern agricultural activities. Although information about archaeological context is lacking, the ancient modifications of these pots may shed some light on their function and meaning.

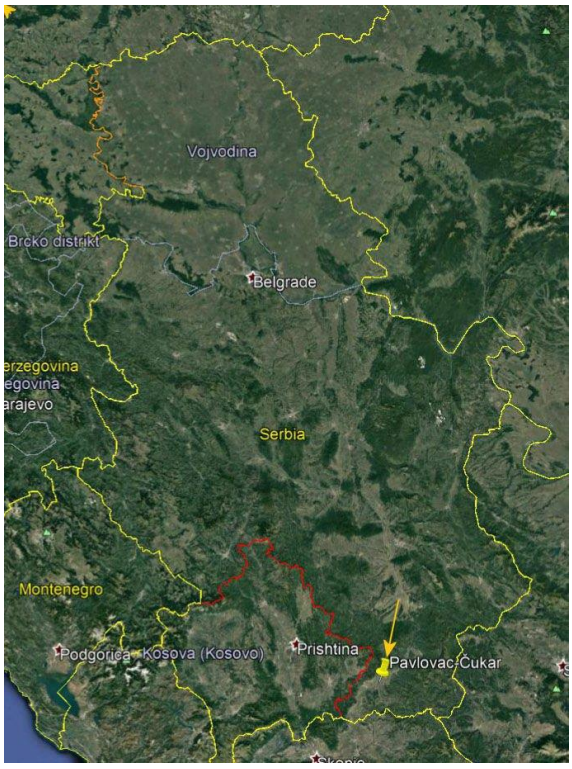

Figure 2. Site of Pavlovac-Čukar, arrowed.

Black-topped Vinča vessels usually exhibit well-preserved surfaces. Traces of use such as notches, incisions or any other form of abrasion or mechanical damage, as well as other kinds of use-alterations (surface spalling, non-abrasive attrition, accretions etc.), are generally absent. The only exception is abrasion of the base, which often occurs as a consequence of frequent handling and usage. However, the Pavlovac-Čukar black-topped pots exhibit different kinds of modifications, such as curation and repair.

The fragment shown in Figure 3 is the lower part of a pedestalled vessel. Its 'bottom' was completely flattened, but not as a consequence of use. The whole of this surface was uniformly abraded. As the mineral temper does not protrude from the surface (it is not 'pedestalled')[1], the base must have been abraded with something harder than the ceramic, probably an abrasive stone tool (cf. Vuković 2017a); thus, the whole bottom represents the zone on which a continuous repetition of the abrasive process occurred (Schiffer and Skibo 1989). The original fired surface of the base was completely removed, revealing the cross-section of the base, allowing us to make significant observations about the technology. The colours on the cross-section, red on the exterior with blurred margin in relation to the inner dark grey colour indicate oxidised firing.

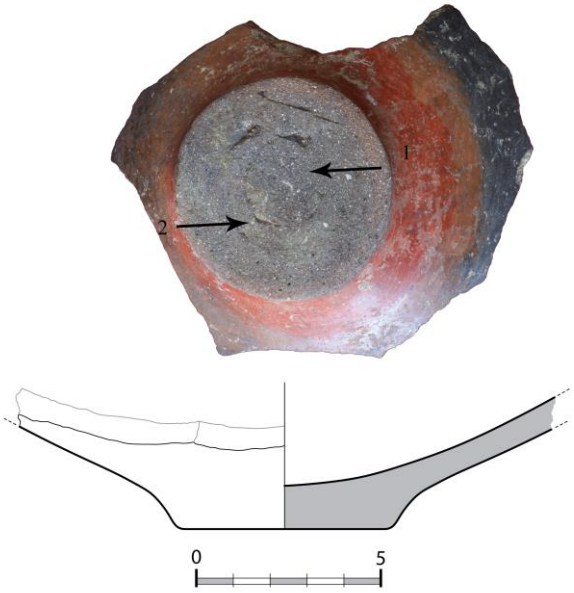

Figure 3. The lower part of a pedestalled vessel. Its 'bottom' was completely flattened.

The central 'cylinder' with a layer of clay around it, clearly indicates that this vessel had a foot (pedestal); when it broke, the broken edge remaining on the base of the pot was flattened, extending the use of the pot. Similar intervention was observed on the specimen in Figure 4: the foot (pedestal) of the pot, which must have been broken or chipped and have become unstable, was flattened in the same manner, using an abrasive (stone) tool.

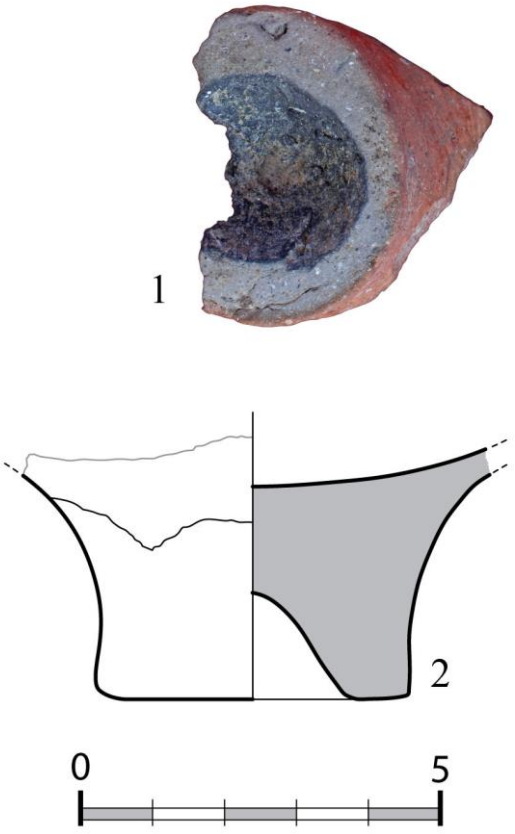

Figure 4. 1. Underside of vessel showing the flattened standing surface of the broken pedestal. The foot of the pot was flattened using an abrasive (stone) tool.

Ancient repair/modifications were seen on two broken foot (pedestal) fragments (Figures 5 and 6). These have a red-slipped exterior and a black interior surface, with traces of a tool used in the process of surface scraping/thinning during the forming of the vessel.

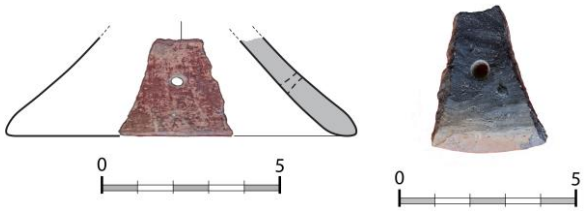

Figure 5. Foot (pedestal) fragment with perforation. Obverse and reverse sides.

In both cases, single perforations are present. These were executed after the firing, slightly above the foot-rim. The hole shown as an example in Figure 5 exhibits chipped edges, indicating that the hole was drilled from the exterior. The other specimen lacks

[1] See Schiffer and Skibo (1989) using "pedestalled temper" as a consequence of contact with soft abrader.

these kinds of traces. Modifications in the form of drilled holes are usually interpreted as repairs: by using some kind of strings, two broken pieces of a pot could be joined and used further.

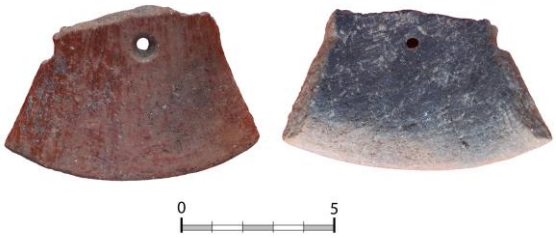

Figure 6. Foot (pedestal) fragment with perforation. Obverse and reverse sides.

One fragment of a vessel foot (Figure 7) differs from the previously described specimens in several important features. Undoubtedly, it belongs to the group of Vinča pedestalled vessels, with a red-slipped exterior and a black interior surface.

Figure 7. Fragment of a vessel pedestal differs from the previous specimens in several important features.

However, its fabric is different. While the other specimens were made of a fine fabric with mineral inclusions and with no macroscopically visible organic matter, this specimen is rich in organic temper. Moreover, the black core is visible in the cross-section. This could be another example of technological hybrid between two Neolithic traditions – Starčevo and Vinča, already confirmed on the ceramics from the site of Pavlovac-Čukar (Vuković 2017b). The modification on this vessel is not, however, a repair, nor a curation, but rather the change of a vessel function. On the bottom of the pot, a hole with a diameter of *ca.* 1 cm was pierced from the interior (Figure 7). The edges of the hole are rounded, indicating liquid abrader, i.e. abrasion caused by a continuous contact of the ceramics with water or some other liquid. Similar examples are known from several Early Neolithic sites, e.g. at Donja Branjevina (see Karmanski 2005, T. CXI/1), as well as from the site of Čukar (Vuković 2018b).

The concept of value of ceramic pots could be considered through the analysis of repairs, and the considerations of breakage and replacement rates. In other words, the vessel will need to be repaired if a new vessel is not available. According to research (Senior 1995; Dooijes and Nieuwenhuyse 2009), the most commonly repaired vessels are those with special importance to their users; these are often luxury vessels, used on special occasions. The most commonly recorded repairs in ceramic assemblages from a wide chronological span are perforations, i.e. 'repair holes', positioned along the fractures of the fragments, which were connected by some thread, or wire in later periods (Dooijes and Nieuwenhuyse 2009; Vuković 2017c, 179-180). Repair holes were recorded in Vinča black-topped pottery from the beginning of research at Vinča-Belo Brdo (Vasić 1936, 18): they were interpreted as evidence that this kind of pottery was highly valuable. It is usually considered that hole drilling may cause the change of vessel function. This is especially true when the holes were drilled in the vessel wall: if a binding agent was not used[2], then leakage of the contents could easily occur. However, modification of vessel feet should not cause a change in function since the holes are not drilled through the walls of the vessel. Therefore, these modifications were not conditioned by strictly functional requirements, and may indicate a different, not strictly utilitarian function of black-topped pottery. The flattened bases of pedestalled vessels can also be regarded in the same way.

The special role or value of black-topped pottery can also be inferred from the technological process. Combined, oxidised-reduced firing atmosphere is time-consuming, and requires special knowledge, skill, experience and expertise of the potter. According to some estimates, however, black-topped pottery was produced in very low quantities (Bonga 2013). This is supported by the fact that black-topped pots are quite rare in Vinča assemblages, indicating limited production and the possibility that they were made only for special occasions. It could further be hypothesised that they were not available to all members of the community and every household.

All these observations indicate that repairs on the black-topped pots, that enabled their extended use, were not conducted for strictly functional reasons. Furthermore, their low frequencies in assemblages, the absence of use-wear traces, and complex technological process, suggest their special purpose. Whether they had a role of prestigious, ritual, or high-status items is still unclear.

[2] In the case of black-topped pottery in Neolithic Greece, archaeometric analyses revealed the usage of binding agents, such as birch-bark tar (Urem-Kotsou *et al.* 2002).

References

Bintintan, A. and Gligor, M. 2018. Pottery kiln: A technological approach to Early Eneolithic black-topped production in Transylvania. *Studia Antiqua et Archaeologica* 22 (1), 5-18.

Bonga, L. A. 2013. *Late Neolithic Pottery from Mainland Greece, ca. 5,300-4,300 B.C.* PhD thesis. Philadelphia: The Temple University.

Dooijes, R. and Nieuwenheyse, O. 2009. Ancient repairs in archaeological research: a Near Eastern perspective. In Ambers, J., Higgitt, C., Harrison, L. and Saunders, D. (eds.), *Holding It All Together: Ancient and Modern Approaches to Joining, Repair and Consolidation*, 8–12. Archetype Publications. London.

Garašanin, M. 1979. Centralnobalkanska zona. In: *Praistorija jugoslavenskih zemalja* II, urednik Alojz Benac, Sarajevo: Svijetlost i Akademija nauka i umjetnosti Bosne i Hercegovine, 79-212.

Hendrickx, S., Friedman, R. and Loyens, F. 2000. Experimental Archaeology concerning Black-Topped Pottery from Ancient Egypt and the Sudan. *Cahiers de le Céramique Egyptienne* 6, 171-187.

Kalogirou, A. 1994. *Production and consumption of pottery in Kitrini Limni, West Macedonia, Greece, 4500 B.C.-3500 B.C.*, unpublished PhD thesis. Ann Arbor, Indiana University.

Karmanski, S. 2005. *Donja Branjevina: A Neolithic Settlement near Deronje in the Vojvodina (Serbia).* Edited by P. Biagi. Atti della Società per la Preistoria e Protostoria della Regione Friuli-Venezia Giulia, Quaderno 10. Trieste.

Schiffer, M. B. and Skibo, J. M. 1989. A Provisional Theory of Ceramic Abrasion. *American Anthropologist* 91(1), 101–115.

Senior, L. M. 1995. The Estimation of Prehistoric Values: Cracked Pot Ideas in Archaeology. In Skibo, J. M., Walker, W. H., and Nielsen, A. E (eds.), *Expanding Archaeology*. Salt Lake City: University of Utah Press, 92–110.

Spataro, M. 2018. Origins of specialization: The ceramic chaîne opératoire and technological take-off at Vinča-Belo Brdo, Serbia. *Oxford Journal of Archaeology* 37(3), 247–265.

Urem-Kotsou, D., Stern, B., Heron, C. and Kotsakis, K. 2002. Birch-tar at Neolithic Makriyalos, Greece. *Antiquity* 76, 962–967.

Vasić, M. 1936. *Preistoriska Vinča* III, Beograd: Izdanje i štampa Držane štamparije Kraljevine Jugoslavije.

Vuković, J. 2017a. Popravke i produžena upotreba keramičkih posuda: primer ranoneolitske zdele s Kovačkih Njiva (Repairs and extended use of ceramic vessels: An Early Neolithic bowl from Kovačke njive). *Zbornik Narodnog muzeja* XXIII-1, 123-133.

Vuković, J. 2017b. Erasing boundaries or changing identities? The transition from Early/Middle to Late Neolithic, new evidence from Southern Serbia. In Gori, M. and Ivanova, M. (eds.) *Balkan dialogues: Negotiating Identity between Prehistory and the Present*, 240-253. Routledge. London.

Vuković, J. 2017c. *Studije keramike: Teorija i metodologija u analizama grnčarije u arheologiji*. Beograd: Zavod za udžbenike.

Vuković, J. 2018a. Late Neolithic Vinča pottery firing procedure: Reconstruction of Neolithic technology through experiment. *Opuscula Archaeologica* 39/40, 25-35.

Vuković, J. 2018b. Neolithic painted pottery: A Case study from Pavlovac-Čukar, Southern Serbia. *From Crafts to Art: Ceramics. Technology, decor, style*, Internationa Academic Research Conference, St. Petersburg, 22-25 May 2018, abstracts, Sankt Petersburg: Saint Petersburg Stieglitz State Academy of Art and Design, State Hermitage Museum, Institute of History of Material Culture RAS, 29-30.