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**ottery Function and Use:
A Diachronic Perspective**

*Edited by
Jasna Vuković and Vesna Bikić*

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CONTENTS

- 7 | Preface

INTRODUCTORY CHAPTERS

- 13 | Use activities, wear mechanisms and residues:
the use alterations variability on pottery in light of the latest
research advancements
Vanessa Forte
- 37 | Pottery Function in the Archaeology of the Continental Balkans:
An Overview
Jasna Vuković and Vesna Bikić

ACTUAL USE OF POTS AND CULINARY PRACTICES

- 69 | Pottery Made to be Used: Starčevo Ceramics from the site
of Svinjarička Čuka, Serbia
Clare Burke
- 87 | Crossing Manufacturing and Use-Alteration Traces on Vessels.
Contribution to a Functional Typology in Alsace (France)
at the Dawn of the Iron Age
Marie Philippe
- 103 | In Search of Pottery Function by Context, Techno-Stylistics, and
Use-Wear Patterns: A Case Study of Brikulji Hillfort Pottery
Vanda Visocka
- 133 | Baking Bread in Italy in the Early Middle Ages:
Some Notes on Portable Ovens
Sauro Gelichi
- 143 | Foodways and Pottery Usage in Ottoman Buda
Ágnes Kolláth
- 163 | Pottery Used for Wood Tar Production and Iron Smelting
Found in the Early Medieval Settlement in Grodnia (Poland)
*Mariusz Błóński, Waldemar Andrzej Moszczyński,
and Jolanta Sadowska-Topór*

- 177 | Ceramic Forms Used for Portable Illumination
in the Bulgarian Lands During the 10th – 11th Centuries
Mariya Manolova-Voykova

POTTERY USE AND TECHNOLOGY, PRODUCTION, AND MORPHO-METRIC DATA

- 189 | Does One Size Fit All? Inverted-rim Bowls from
the Late Neolithic Sites of Belovode and Pločnik
Marija Svilar
- 209 | Capacity as Quantitative Data of the Household Activity.
Neolithic Case Studies from the Great Hungarian Plain
András Füzesi
- 263 | Calculating Pottery Usage: The Link between the Capacity
of Vessels and Their Function (Based on the Pottery from
Zlatna Livada, Bulgaria)
Rumyana Koleva

CONTEXTUAL, SPATIAL, AND CHRONOLOGICAL CONSIDERATIONS AND FUNCTION

- 279 | The Structure of Archaeological and Functional Ceramic
Assemblages of Cucuteni-Tripolye Sites:
Precucuteni, Cucuteni A – Tripolye A, BI Periods
Ilia Palaguta
- 301 | The Ceramic Assemblages of Cucuteni A-B, B – Tripolye BII, CI:
Archaeological and Functional Aspects
Elena Starkova
- 323 | *Olla et Domus*: Interpreting the History of Late Roman Houses
Based on The Study of Pottery and Vice Versa
Platon Petridis
- 337 | Clay Cauldrons in the Southern Parts of the Carpathian Basin
– Facets of Consumption and Use
Miklós Takács

CLOSING CHAPTER

- 351 | Understanding Pottery Function: Consider the Cooking Pot
James M. Skibo
- 363 | Notes on Contributors

PREFACE

International meetings of pottery experts, even though pottery is the most numerous material found during excavations, are surprisingly rare. Except for large conferences, for instance meetings of the European Association of Archaeologists, with the possibility of organizing themed sessions, the existing conferences dedicated exclusively to pottery are focused on a specific field of research, such as archaeometry, or are limited to a specific period. This is why we came up with the idea of establishing an international conference specializing in archaeological pottery, with the main goal of bringing together researchers dealing with different periods and geographical areas, and originating from different research traditions. We strongly felt that, for instance, medieval experts share similar research doubts and difficulties as prehistoric archaeologists and that all of us eventually use similar methodologies, ask similar research questions and, consequently, can potentially learn a lot from each other. Therefore, the *BECAP – Belgrade Conference of Archaeological Pottery* was established as a biennial, themed conference, with minutely formulated topics aimed at pottery specialists, regardless of their cultural/chronological preferences.

The first meeting, entitled *Pots in context: Vessels' use, function, and consumption, research strategies, and methodology*, was planned for May 2020. We wish to express our gratitude to our colleagues, the members of the Scientific Committee of the Conference, who were very enthusiastic about the conference and took an active role in evaluating all the submitted abstracts. The global outbreak of COVID-19, however, heavily impacted all aspects of life and, as a consequence, challenged scientific practice as well. Like many other conferences, the BECAP meeting was postponed and was held online several months later, in February 2021: 45 participants from 16 countries were presenting, while many researchers from Europe took part in a range of fruitful discussions. Adjusting to the new pandemic situation and the necessity for remote communication, as many fellow archaeologists experienced themselves, however, revealed some positive sides. The BECAP meeting was live-streamed on YouTube, and it turned out that several hundred people watched it live and later via the BECAP channel. We are grateful to all participants and colleagues who served as moderators for the conference, for making it dynamic, interesting and engaging, both for us and the audience.

The present edited volume encompasses some of the papers presented at the meeting held in 2021. It is the first book examining pottery use and function diachronically in this part of the world: different theoretical perspectives and methodological approaches, and several case studies, we believe, enable a more thorough understanding of pottery and raise new questions and research challenges. The book is organized into several sections. The introductory chapters consider the state of research and methods for use-wear analysis, with valuable methodological guidelines, and the importance of the contribution of experimental archaeology (Forte), whilst also presenting an overview of current knowledge related to pottery function in the Balkans (Vuković and Bikić). The first section of the book is dedicated to analyses of actual use of pots, culinary practices, and secondary use. A combination of analyses of vessel morphology/typology and use-alterations, use-modes of Early Neolithic Starčevo, Serbia (Burke), Early Iron Age, France (Philippe) and Late Bronze – Early Iron Age, Latvia (Visocka) pottery were explored. The usage of basin-covers during the Late Antique period and the Early Middle Ages in Italy reveals a long tradition of baking bread in a specific way (Gelichi), while food habits in Ottoman Buda, Hungary, are explored by examining written sources, archaeozoological and macrobotanical evidence and pottery analyses (Kollath). Ceramic containers used in the process of iron smelting and tar production in medieval Poland (Błóński et al.), and secondary use of pots for illumination in medieval Bulgaria (Manolova) reveal some of the non-food related activities involving pottery. The relations between technology and production, and pottery use are explored in the second section: morphometric data revealing standardization, and formal attributes combined with the analysis of use-wear traces were used to assess the function of one class of bowls in Late Neolithic Serbia (Svilar). The importance of vessel volumes is also stressed: based on the results of capacity data analysis, the interrelationship between size and function was explored for the medieval assemblage from Bulgaria (Koleva) and, additionally, users' group sizes for the Neolithic assemblages from Grat Hungarian Plain were established (Füzesi). The third section is dedicated to various research related to contextual, spatial, and chronological analyses and function. The notion of functional assemblages and their contents was explored in the cases of Cucuteni-Tripolye sites from the Prut-Dniester interfluvium (Palaguta, Starkova); a methodological contribution focused on analyses of stratigraphy and pottery from Late Antique Greece sites reveals how possible errors in interpretation may emerge if the investigation is conducted only by using a typological approach (Petridis); the analysis of formal properties, chronology, and establishing regional groups of medieval cauldrons of the

Great Plain of the Carpathian Basin are presented (Takács). Finally, prof. Skibo reconsiders the significance of the “ugly” cooking-pot as an innovation, and reexamines the reasons of devaluing such important technology in archaeology.

We would like to thank all the contributors for their interesting articles, for their patience during the review process, and for fulfilling our, the editors’ very demanding requests. We would also like to thank the reviewers, who promptly and meticulously read the papers and offered their suggestions. Our gratitude is extended to our institutions, the Faculty of Philosophy, University of Belgrade, and the Institute of Archaeology, for supporting us, and enabling funding for this book. Finally, we would like to express our special thanks and appreciation to Professor James Skibo for his support and promotion of the BECAP conference.

Jasna Vuković and Vesna Bikić

POTTERY MADE TO BE USED: STARČEVO CERAMICS FROM THE SITE OF SVINJARIČKA ČUKA, SERBIA

Clare Burke

Introduction: Starčevo Neolithic

Early-Middle Neolithic in Serbia and the surrounding regions (c. 6200-5400 BC. Biagi et al. 2005; Manson 2008; Perić 2009; Fidanoski 2019; Porčić et al. 2020), is characterised by distinctive social transformations during the establishment of increasingly settled farming communities who undertook a range of crop and animal cultivation, domestication, and management strategies (Spataro and Biagi 2007). During this time, we also see a degree of coherence between areas that cross modern geographical boundaries in relation to the type and appearance of a range of material culture classes, including potential ritualistic objects such as cult tables and figurines, elements of lithic assemblages and technologies, and pottery. Traditionally, aspects of similarity, particularly in relation to ceramics, have been used to define chronological systems and cultural groups, which has created difficulties in correlating different areas (Nikolov 2002; Biagi et al. 2005; Nikolić 2005; Boyadzhiev 2009; Budja 2009) and debates the timing and relationship of different pottery styles (Stojanovski et al. 2014; Spataro 2019, 43 Fig. 1.7)

In Serbia, Early-Middle Neolithic pottery is characterised as belonging to the Starčevo group, originally defined at the site of Starčevo Grad (fig. 1). This pottery is typified by the dominant presence of jar and bowl shapes, usually with globular, conical, s-shaped, narrow-mouthed and biconical profiles, which display a varied range of distinctive surface finishes of Barbotine, pseudo-Barbotine (hereafter referred to as roughened), slipped, painted, and incised motifs, which have been used to define a range of relative chronological schemes and relationships (Table 1, Miložič, 1950; Arandjelović-Garašanin 1954; Srejović 1972; Garašanin 1979; Dimitrijević 1979; Nikolova 2007; Pavuk 2016).



Figure 1. Location map of Svinjarička Cuka in relation to other Early-Middle Neolithic sites (designed by M. Börner. Taken from Horejs et al. 2019: 176. Fig. 1)

Milojčić 1950	Arandjelović-Garašanin 1954	Garašanin 1979	Srejović 1972	Dimitrijević 1979
Starčevo I	Starčevo I	Starčevo I Gura Baciului	Proto- Starčevo	Monochrome White Linear- Linear A
Starčevo II	Starčevo IIa	Starčevo IIa	Classic Starčevo	Garlandoid Dark LLinear-Linear B
Starčevo III	Starčevo IIb	Starčevo IIb		Spiraloid A
Starčevo IV	Starčevo III	Starčevo III		Spiraloid B

Table 1. Correlation of Starčevo typo-chronological systems, adapted from Manson 2008: 92, Fig. 3

These relative chronologies have been increasingly accompanied by absolute dates from sites across Serbia and neighbouring areas that contain Starčevo type pottery (Biagi et al 2005; Minichreiter and Bronić 2006; Fidanoski 2019; Porčić et al. 2020). Such work has made it increasingly clear that the adoption of the Neolithic way of life and variability in pottery assemblages across SE Europe relates to different rates of change in places at different times, which would have been dependant on a wide range of socio-economic, environmental, and cultural factors (Plog 1980; Braun 1983, 110-111; Fidanoski 2019; Naumov 2015, 2016; Nikolova 2007, 96).

Whilst traditionally Neolithic pottery from Serbia and wider SE Europe has been the focus of typo-chronological and distribution studies, the past 20 years has seen a fundamental shift in approach with the incorporation of new analytical methods to tackle questions around spheres of contact, migration, and cultural identity (for example Kreiter et al. 2013; See contributions in Ivanova et al. 2019 and Amicone et al. 2019; Spataro 2019; Stojanovski et al. 2020), including arguments for a move away from speaking in terms of cultures (Tsirtsoni 2017). The work done so far for the Early-Middle Neolithic highlights important new data that suggests that the broad typological coherence of different Neolithic pottery groups is also represented in many aspects of technological and raw material choices (Spataro 2019), that pottery containers were used in a variety of food preparation and/or consumption activities such as dairying (Craig et al. 2005; Cramp et al. 2019; Stojanovski et al. 2020), and that pottery previously understood to be for display or special purposes was indeed used in ways similar to more utilitarian types (Bajčev 2018).

This paper will discuss the ceramics from the site of Svinjarička Čuka in Serbia, which are being examined as part of the FWF funded NEOTECH project (award No P32096) led by Barbara Horejs. Whilst the ceramic aspect of the NEOTECH project focuses on defining the technological and raw material variability within the Neolithic assemblage using a multi-analytical investigation that combines, macroscopic, petrographic, and microstructural analyses, examination of the pottery by the author highlighted its potential for analysis in relation to pottery use. As such, this paper will discuss the current macroscopically observed data in relation to evidence of use alteration, whilst future work will integrate all the ceramic data strands in order to not only gain more detailed and useful insights into how and where the pottery was made, but, importantly, *why* ceramic containers were so widely adopted by Neolithic communities (Braun 1983, 110). Certainly, there have been a range of ethnographic and experimental studies that have successfully demonstrated the value of use alteration

studies for contributing to our understanding of how past people utilised pottery vessels (Hally 1983, 1986; Skibo 1992; Arthur 2002, 2003, Schiffer and Skibo 1989; see authors such as Forte this volume). Additionally, considering that the Neolithic represents a boom in the adoption of ceramic containers alongside broader developments in food resource management related to agricultural practices as well as storage, an examination of pottery use offers an important avenue of Neolithic research.

The Site of Svinjarička Čuka

This site of Svinjarička Čuka is located on a small, elevated terrace near the Svinjarička River in Lebane, close to the famous Byzantine city of Justiniana Prima (Caričin Grad) (fig. 1). The site was first identified during a survey in 2017, which revealed an abundance of Neolithic artefacts at the surface, whilst radiocarbon dating of core drillings at the site confirmed the presence of Early-Middle Neolithic layers (Horejs et al. 2017; Horejs et al. 2019). Geophysical investigation additionally revealed a number of large sub-rounded features that could possibly relate to pit structures similar to those well known from across SE Europe and widely interpreted as dwellings (Bailey 2018). With such a high potential for Neolithic archaeology in this area, excavations were opened in 2018 led by Professor Barbara Horejs (Department of Prehistory, West Asian and North African Archaeology, Austrian Archaeological Institute), and Dr. Aleksandar Bulatović, (Institute of Archaeology, Belgrade) in cooperation with Vladimir Stefanović (the National Museum, Leskovac).

Whilst the excavation and post excavation work have been temporarily halted due to the Corona virus pandemic, the work done to date has uncovered prehistoric remains spanning the Early-Middle Neolithic (current levels date to 5600BC. Horejs et al. 2019, 175) through to the Iron Age. Although disturbed by later activity, the Neolithic archaeology can be characterised by architectural features such as a probable oven platform and an abundance of burnt daub, including examples with post impressions, accompanied by a variety of artefactual remains. These include pottery, cult tables, figurines, labrets, archaeobotanical remains, animal bones and bone tools (Horejs et al. 2019), all consistent with inhabitation and a range of activities having been undertaken at the site.

The Pottery of Svinjarička Čuka

The ceramic assemblage excavated to date contains a range of shapes and surface finishes consistent with Classical Starčevo or Starčevo II-III,

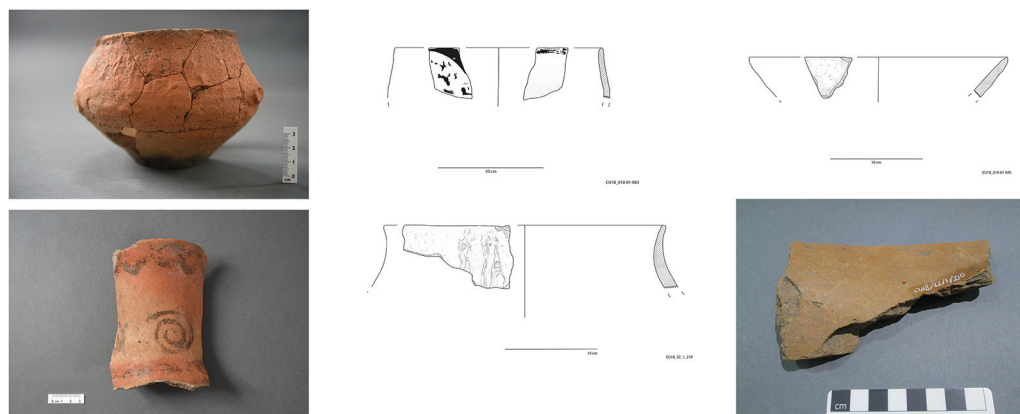


Figure 2. Images and profiles of Starčevo vessel types at Svinjarička Čuka. Top left to right – Biconical bowl with barbotine surface finish, bowl with dark painted spiraloid decoration, conical bowl. Bottom left to right – Neck of ‘amphora’ jar, large storage jar profile and photograph displaying its polished interior (Photos: F. Ostmann, D. Blattner, C. Burke. Profile Drawings: D. Blattner)

with similar types noted at Donja Branjevina (Dimitrijević 1974), Starčevo Grad (Fewkes et al. 1933), Blagotin (Vuković 2004), and Grivac (phases II and III Bogdanović 2008). The assemblage is dominated by Barbotine and roughened jars, conical or narrow mouthed jars, and biconical bowls with linear cross-hatch incised decoration, accompanied by lesser proportions of red slipped pedestalled deep bowls/jars, with dark black or brown linear or spiraloid decorative motifs, and a rare example of a funnel necked jar or ‘amphora’ with dark spiraloid decoration (fig. 2). These shapes are all formed using a combination of slab and pinch methods, with lesser evidence of coiling (Horejs et al. 2019).

In addition to typological work, the macroscopic analysis has revealed a limited number of distinct macro fabrics (fig. 3).



Figure 3. Examples of the macroscopic fabrics prevalent in the Starčevo ceramics. Top left – organic tempered fabric. Left to right – organic tempered fabric, gritty fabric with white and semi-translucent inclusions, gritty and organic tempered fabric, fabric with rounded red-brown inclusions (Photos: F. Ostmann)

These can be broadly grouped by eye as mostly dominated by a brown to orange firing soft fabric containing mica, and elongated voids or impressions that are consistent with the presence of organic temper, with blackened remains visible in some examples. This is accompanied by a version also containing orange-brown sub-rounded inclusions, and a version containing angular white to semi-translucent hard inclusions that give it a grittier feel. This latter grittier group is also found without visible signs of organic temper.

Whilst each of these broad macroscopic fabric groups can be found associated with a wide range of pottery types, it is notable that there does appear to be a degree of correlation between the organic tempered fabric and jars/thick-walled vessel types, and a degree of correlation between the grittier fabrics and biconical bowls. These macroscopic observations will be explored more fully through detailed petrographic investigation of the ceramic pastes and their constituent raw materials, where work by other scholars has shown that there is not usually a shape to fabric relationship (Spataro et al. 2019, 21).

The Study of Pottery Function

The physical examination of the technological, raw material and use alteration aspects of ceramic containers enables us to consider not only the performance characteristics and function of these vessels but also elements of social and technical knowledge, skills, and communication. Certainly, pottery as a robust material that requires specific learnt skills and knowledge to produce, and a class of material that seems to have been used in the daily lives of past communities, offers us an ideal source of evidence with which to examine past choices and behaviour. Examination of the typological aspects of pottery offers important insights into what past peoples thought pottery should look like. However, by extending this further to include a more detailed examination of the potential functional nature of these vessel shapes and wares, we can begin to think about how past peoples also thought these vessels should be used and their role within their community or culture. From this perspective, the examination of vessel morphology and use alteration is a valuable methodology (Schiffer and Skibo 1989; Skibo 1993, 2013, 29).

Vessel morphology can be used to infer potential functions of ceramic vessels considering not only the size/capacity of a vessel but also elements such as rim type and orifice size (being open or closed), relating to how easily accessible a vessel's contents were (Rice 2005, 225) and whether a vessel was more suitable for scooping or for pouring, for example (Skibo

2013, 32). To compliment this, examination of use alteration traces can be used to infer the kinds of activities in which pottery was used and to identify any relationships between pottery classes and how they were used (Hally 1986; Schiffer and Skibo 1989; Arthur 2002, 2003; Vieugué et al. 2010; Skibo 2013; Vieugué et al. 2014; Bajčev 2018; Vuković 2009, 2019). Within this methodology two sources of use alteration evidence are considered. The first is attrition, where surfaces have become physically altered through mechanical or chemical processes resulting in things such as abrasion marks (Braun 1983; Hally 1986; Schiffer and Skibo 1989), and by recording the character, direction, and location of these marks it is possible to infer the type of use alteration activity. The other is the examination of deposits or residues left on the vessel surfaces such as sooting, burnt remains, and deposits (Hally 1986; Skibo 2013, 63).

A range of ethnographic and experimental studies have highlighted that deposits and attrition generally occur in particular areas of vessels relating to their repeated use in similar ways, for example sooting can tell us about the position of a vessel in relation to the fire during cooking or activities requiring the contents to be heated (Skibo 2013, 63–64). As such, the most successful use alteration studies require whole vessels, however, in our archaeological reality this is rarely a possibility so, instead, we have to rely on the reconstruction of profiles and diagnostic sherds. In light of this it is especially vital that we understand the nature of the marks that we can see on pottery, and identify *repeated* patterns that suggest the use of a vessel in a regular activity rather than post depositional alteration, which usually displays a more randomised alteration (Skibo and Schiffer 1987, Vieugué 2014, 624).

With few exceptions (such as Vuković 2009, 2011, 2018), and the work of Laure Salanova and colleagues (cf. Vieugué et al. 2010; Salanova 2019), in SE Europe there is little data about the relationships of Early-Middle Neolithic pottery technology, typology and function as a holistic approach, instead scholars have understandably tended to focus on one or two of these aspects with pottery residues not being correlated to specific vessel shapes or fabrics (Craig et al. 2005; Cramp et al 2019; Stojanovski et al. 2020). However, the work that has been done, particularly that of Vuković (2011, 2018) and Bajčev (2018) in Serbia, has significantly changed our existing view of Starčevo pottery. In particular, Bajčev's work on the pottery from Starčevo Grad has demonstrated that, contrary to previous understandings, painted pottery was used for more than simply display purposes, whilst Vuković's analysis of pottery from Structure 03 at Blagotin has enabled her to define a series of functional pottery groups at the site related to heating, storage and transportation.

The study of pottery from Svinjarička Čuka integrates typological, macroscopic observations of fabric, forming, firing, and use alteration. As the work is in its very early stages, much of the ceramic material is still in a fragmentary state and repair work is ongoing, so the observations discussed are from the examination of a small number of whole vessels or vessel remains with well-preserved profiles, as well as sherds from all deposits excavated so far.

Pottery Use at Svinjarička Čuka: Vessel Morphology

As already outlined above, the assemblage at Svinjarička Čuka comprises of bowl and jar shapes with each of these main classes displaying a range of morphological variation. Bowls can be divided into three main types: conical, biconical and globular/deep, some with a pedestalled base. The conical types are notable for their large size and very open shape, with a rim diameter of 30 cm or more and a wall thickness of around 1-1.2 cm, made through slab, drawing and pinching methods. Although not always, they are commonly associated with an organic tempered or organic and gritty macroscopic fabric (figs. 2 and 3). This kind of morphology suggests they were used in activities that required regular and easy access to the contents of the bowl, perhaps in relation to food preparation or consumption, whilst their comparatively large size suggests this was for big or communal portions/contents rather than individual servings. The correlation of these vessels to organic tempered fabrics may also relate in some degree to their size and weight, and whilst there is abundant evidence that demonstrates pottery choices are not simply related to functional performance, potters will have no doubt considered functional and performance requirements. In this instance, organic tempering may have aided workability and clay stiffness in relation to the need for such thick-walled vessels to hold their shape during forming, drying, and firing, as well as potentially helping to make such large vessels lighter for portability. Indeed, Vuković has suggested that portability was the principal concern for potters, potentially related to population mobility, and this is why organic tempering was such a prevalent raw material choice in Starčevo pottery making (Vuković 2019, 174; Spataro 2019, 362–363; Spataro et al. 2019)

The second common bowl type is biconical (fig. 2), usually made in two halves that were then stuck together with the join usually being visible at the carination of the belly. These vessels are much smaller than the conical types, with a rim diameter of 15-20 cm, a wall thickness of 0.5-0.7

cm, and a height of around 15 cm. Like the conical types, they appear in a number of macroscopic fabrics, but are notably commonly associated with a gritty fabric or gritty and organic tempered fabric. These bowls usually have a flat base, so were expected to stand upright without support, and have a narrower orifice than the conical types suggesting that although they were designed for access to their contents, it was perhaps to a lesser extent.

Jars are broadly divisible between large globular types, examples of which have horizontal loop handles around the belly, with flaring rims and a rim diameter of 35-45cm. These are accompanied by smaller narrow mouthed conical types that have a rim diameter of 12-14 cm. We also have an unusual example of a jar or 'amphora' with a funnel neck and rim diameter of 14 cm, which is highly decorated with black painted spiral motifs. Whilst the opening of the larger globular jars indicates their contents would be accessible, their thick walls and larger size may have made them less portable than the smaller, thinner jar shapes; as such it is likely that these were for storage. In particular, it is noticeable that on these larger storage jars, as well as some of the smaller jar types, there are burnished and/or slipped interiors. This could have acted to seal the surface, preventing wet or liquid based contents from being absorbed into or sticking onto the container, which would be a particular problem for very porous pottery such as that made with organic temper (Rice 2005, 231). This type of interior finish does not appear to be a standard finish that was consistently used for the same vessel types, but instead can be present or absent on the interior of a variety of shapes, suggesting that not all vessels were intended to function in the same way.

Pottery Use at Svinjarička Čuka: Abrasion and Deposits

Whilst vessel morphology can give us some insights into potential pottery function, it is more beneficial and secure to include an examination of surface traces of use wear as well as any preserved deposits and residues. Whilst evidence of use alteration is not common in the assemblage, it has been possible to detect it on well preserved sherds and vessel profiles. Two main types of use wear have so far been identified, the first relates to surface abrasion, characterised by distinct pitting of the interior vessel surfaces, with loss of surface finish and inclusions (fig. 4). This type of use alteration is found on the interior of jars and some bowls, usually occurring 2/3 of the way up the vessels interior, although some examples display the abrasion below the opening/rim.



Figure 4. Photographs of vessels displaying evidence of use alteration. Left – the interior of a pedestal base displaying deep abrasion on the surface. Middle – the worn exterior base of a jar with the grey firing core visible. Right – Pitting and loss of surface finish on the interior of a deep bowl/jar (Photos: F. Ostmann, D. Blattner and C. Burke)

This distinctive pitting is consistent with an aggressive chemical rather than mechanical process, such as fermentation (brewing, bread making, dairying etc.), and is similar to that noted by Hally in relation to the long-term soaking of grains (1983, 18-19). Similar pitting has been recorded on Starčevo pottery from Blagotin by Jasna Vuković, who also argues for fermentation for making beer or gruel (Vuković 2009, 32). The potential preparation of gruel is an especially suitable hypothesis, considering that the range of activities required to prepare such dishes (grinding, heating and fermenting, Steinkraus 1996 and Blandino et al. 2003) would create both the mechanical and chemical use alteration noted on different vessels at Svinjarička Čuka. That said, it is also interesting to keep in mind ethnographic examples that highlight important links between agricultural communities and brewing activities (Arthur 2002, 2003), and, as Vuković highlights, the increased adoption of wheat and barley may have led to the development of brewing activities within Starčevo communities (Vuković 2009, 32), potentially an important part of social cohesion and negotiation during this period of fundamental change in how communities organised themselves and interacted. There is certainly increasing evidence for and much debate around brewing and fermentation activities for alcohol production during the Neolithic and even earlier (Dietrich et al. 2012; Liu et al. 2018; Eitam 2019; Heiss et al. 2020), however, much more work needs to be done in order to definitely identify brewing over other fermentation activities with varying results from use-wear experimentation alone (Groat 2020).

The second distinct group of use traces relates to pedestal and biconical bowls, examples of which display broadly horizontal striations on the lower interior wall near the base, and more general abrasion with loss of surface finish exposing harder inclusions on the interior of the base itself. These marks are consistent with mechanical actions from an object

abrading the surface (Schiffer and Skibo 1989), such as a spoon during stirring or from rubbing and scraping during cleaning, certainly with the biconical nature of some of the bowls it would be necessary to angle any spoons or scoops to access the contents and the base, and it would be likely that some contents could get stuck and adhere to these areas. Similar marks have been recorded by Olga Bajčev at Starčevo Grad, interestingly also in relation to bowls and pedestal shapes (Bajčev 2018), which she also argues relates to activities such as stirring and cleaning, but also potentially to the use of pedestal bowls for grinding (2018, 102-104).

Examination of the pottery at Svinjarička Čuka has also highlighted the presence of abrasion on the underside of some thick-walled jar bases where their edges are worn down. This kind of abrasion may result from dragging/scraping/rotating the vessel on a coarse/hard surface, with some vessels clearly having been dragged or rotated extensively, as evidenced by the erosion of the orange surface to reveal the grey firing core (fig. 4). This kind of abrasion not only suggests that these vessels were moved but that it was potentially too difficult to lift them due to their size and possible weight, particularly when full. Use wear abrasion on the base of vessels was also noted in relation to different vessel types by Bajčev in Serbia (2018) and Vieugué in Bulgaria (2014, 625).

Alongside these physical signs of use in terms of damage and alteration to the vessel surfaces, the pottery from Svinjarička Čuka also includes examples with preserved deposits on their interior, which whilst rare within the assemblage, also offers important insights and opportunities for further work. These deposits consist of two types, the first is white to yellow-white and can be found coating the interior of jars and undiagnostic wall fragments. On initial inspection, these white remains could appear as post depositional from activities such as calcite leaching through the soil and ground water. However, it is notable that first, the soil conditions of the site are not calcareous and second, other ceramic finds such as other pottery vessels or figurines from the same stratigraphical units did not display this thick white residue suggesting in some cases these deposits may relate to primary use.

Such deposits have been noted across Neolithic sites such as Blagotin (Vuković 2009, 2019) and in the broad geographical research of Spataro (2019), as well as further afield in Turkey, where they were confirmed as food stuffs (Hendy et al. 2018). Vuković has suggested they relate to dairy-ing activities (2009), which would be consistent with the increasing residue evidence for dairy during the Neolithic in SE Europe (Craig et al 2005; Cramp et al. 2019; Stojanovski et al. 2020) and match well with the Hendy et al. results, whilst others have suggested they relate to the consumption of ground bone for nutritional needs (Vieugué et al. 2015). We should also



Figure 5. Photographs of sherds displaying preserved deposits and discoloration on their interior. Left – a thick walled wall fragment of probable jar with white deposit. Middle – a bowl with blackened interior and charred deposits. Right – Jar base interior with blackened interior (Photos: D. Blattner and C. Burke)

consider that these residues may not all relate to the same activities, or indeed only to food preparation, but could be, for example, related to the preparation of white coatings or ‘paints’, such as those used to decorate incised inlays on objects like cult tables. Certainly, to clarify this more work is needed to include organic residue analysis in pottery studies.

The second deposit type relates to the very rare presence of sooting and charred remains on the interior of some sherds, including small jars and biconical bowls in a gritty and organic tempered fabric (fig. 5), indicating their use for heating or cooking contents. This corresponds to findings in other studies such as Spataro, who identified carbonised food remains on a range of vessel shapes but noted that 84% belonged to vessels with a more restricted orifice (2019, 375). Indeed, the narrower opening and smaller body of these shapes may have aided the cooking process, perhaps related to simmering or stewing (Rice 2005, 240; Skibo 2013, 29-10), again something that would fit with the idea of preparing a gruel type meal.

Conclusions

Although very preliminary, these early observations have indicated a range of potential pottery uses at Svinjarička Cuka during the Early-Middle Neolithic, many of which tie in closely with observations made in relation to Starčevo pottery from other sites, which may indicate that not only did Starčevo pottery broadly share elements of production, as demonstrated by Spataro (2019), but may also have shared elements of use and function.

The initial assessment of the material excavated so far suggests that the Neolithic community at Svinjarička Čuka used pottery for heating or cooking. However, as charred deposits and blacked pots are rare in the as-

semblage it is likely that the use of pottery for such activities was perhaps not extensive. It also appears that pottery was used in activities potentially related to fermentation, be that for bread and gruel making, brewing, dairying or indeed all these activities, and were potentially multifunctional, or what Skibo refers to as the ‘Swiss Knife of pots (2013, 5). Additionally, whilst at this early stage of the work it is not possible to establish a clear relationship between vessel types and potential function, which will require detailed examination and statistical analysis of the full pottery assemblage, it does appear that from elements of morphology and use alteration that bowls and small jars may have been used in cooking, whilst larger jars and deep bowls may have been used to store and potentially ferment different foodstuffs. It is hoped that additional work planned by the author, which will include organic residue analysis, will help clarify what vessels contained and if it is indeed possible to see relationships between choices related to the raw materials used to make different vessels and the ways in which vessel types were used.

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