Ceramic through the Millennia: methods, approaches, results

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SESSION ABSTRACT

The session is devoted to the all aspects of ceramic studies from methods of recovery and preservation to experimental archaeology, from ethnoarchaeological research to new forms of analysis. Temporally, we will deal with archaeologists who deal with the first appearance of clay vessels up to the Iron Age. We are interested in inviting scholars who wish to discuss different methods (including statistical methods) for researching ceramic artifacts and the history of the different methods used around the world. Studies that look at differences in shape, ornamentation, production, and function are particularly welcome. We would also like to look at the ways in which ethnographic and ethnoarchaeological analyses enhance our understanding of past ceramic production and consumption. Our main emphasis, however, will be on look at how ceramic analysis can help us to better understand societies and cultures of Europe and neighboring territories in the past. It is our hope that this session can address common methodological problems that we all face. We also wish to discuss how differences in ceramic production, form, and style can help us understand archaeological cultures, the migration of ancient groups, and past cultural interaction. Can ceramic artifacts reflect culture contact? Do center/periphery models help us understand the consumption and distribution of ceramics in the past? Is ceramic trade linked to innovations in metallurgy? Is ceramic technology linked with social development? We hope to address many of these questions in our session. In addition, we would like to invite participants who work with ceramic artifacts in many contexts from burials to settlements, unusual ceramic items, and/or unique decorative styles.

Danuta Prinke (Poland)

Misterious pottery from the East in the Neolithic of the Polish Plain: various interpretations of its origin and chronology

Pottery mentioned in the title represents quite „another world" in the Neolithic of Poland as far as form, ornamentation and technology is concerned. Its main concentration was discovered in the Kuiavia (Midwestern Poland), while its origin and chronology belongs to the most discussed problems of the Neolithic of the Polish Lowlands during last 25 years. While archaeologists generally afree that this feature has an East European origin, however it could not so far be synchronized with any of the chronologically and/or genetically defineded impulses from this direction although it has been first identified as long ago as 1936. In the following interpretations of its presence in the Vistula area the following aspects have been stressed:

- its "foreign" origin, but also some links to the local Funnel Beaker Culture (1936 – as so called Band-and-Comb Pottery)
- its SE European roots as a result of the selective transformation of the patterns of the Trypolian Culture asymilated in the enviroment of the local Funnel Beaker Culture (1981 – so called Mątwy Pottery and Mątwy Cultural Group of the Funnel Baker Culture in Kuiavia)

- its NE European origin as a result of the chronological and territorial contact of the Narva Culture and Funnel Beaker Culture (1987 - NE Poland)
- necessity of analysing this pottery phenomenon undependently from the Funnel Beaker Culture (1999, 2001)
- possibility of explanation of its presence in the frames of the concept of local origin in conjunction with the Funnel Beaker Culture (2003 – N Kuiavia).

The aim of the paper will be the critical analysis of the above mentioned concepts from the perspective of the newer research and the next attempt to find a place in chronology and geography of the Polish Neolithic for this misterious pottery.

Radosław Szczodrowski, (Bydgoszcz, Poland)

Shapes of Neolithic ceramic vessels in cultural perspective

The archeological classification of shapes or forms of ceramic vessels is often very technical to fulfill needs of complicated typology. On the other side, the archeologists use contemporary, ordinary words to describe diversity forms of vessels. Many archeological cultures have names descending from shapes or forms of vessels or their elements.

This paper tries to take hold of relations between archeological and cultural perspective in research connected with shapes of Neolithic ceramic vessels. We think that archaic cultures had their own way to classify their objects and forms of them, different from classical archeological attitude. We will be searching for origins of forms of vessels, links between shape and function, ornamentation, size. Forms of vessels or their elements will be analysed in symbolic and ritual perspective.

This paper is based on archeological finds from Neolithic period from Central and East Europe, particularly from Globular Amphora Culture.

Tkachuk Taras (National Preserve of Monuments “Ancient Galich”, Ukraine)

“Wave of advance” model and development of the ceramic design of the Cucuteni-Trypillya Culture

A.J. Ammerman and L.L. Cavalli-Sforza have proposed model for process of neolithization in which cultural gains and traditions are distributed and connect with migration of the people for not long distances from the center of the culture. It is thought that every generation (25 years) advances 18 km.

In our presentation, we will attempt to show how his model plays a role in the development of the ceramic design of the Cucuteni-Trypillya culture. We will propose an exploration for instabilities in the pottery design of east and west areas of culture in the B I stage, as well as the difference of relative chronology for the western and eastern ceramic complexes of Cucuteni-Tripillya local groups (B II-C II stages).

Miloš Gregor, Jana Šuteková (Bratislava, Slovakia)

Mineralogical and petrographical analysis in the study of ancient ceramic. Late Eneolithic Ceramics from Kočín (SW Slovakia): a case study.

The Late Eneolithic cultural developement is not clear in Central Europe till now. During the Postbaden period, under discussion here, the observed region of Western Slovakia, Moravia and Lower Austria were settled by the postbaden Bošáca group and Jevišovice culture in general. Only one extensive territory, the Danubian Plain was considered to be deserted in this period, as a result of the dry climate at the end of the Baden Culture.

But these facts have turned out to be very questionable over the past years, after excavation of the settlement site at Kočín (Piešťany) in SW Slovakia. Kočín is the first settlement of "true" Jevišovice culture east of Malé Karpaty Mts. and Biele Karpaty Mts in Slovakia. After ceramic typological analysis, it looks more like a secondary expansion of the Jevišovice culture from the primary center in Lower Austria, or Moravia.

Except the archaeological analysis (typology; ceramic decoration etc.), we have to use other interdisciplinary methods as possible. One of them is the mineralogical and petrographical analysis. For instance it could help us to verify the origin of ceramic raw materials, so the autochthonic or far-fetched ware; technology of making vessels etc.

The analyzed samples represent pottery fragments from the site at Kočín. For this study were choosen ten, most representative ceramic fragments. Shards were studied by optical microscopy (OM), X-ray powder analysis (PXRD) and by scanning electron microscopy (SEM) in order to identify the mineralogical and petrographical composition of analysed shards. The apparent porosity was measured according to Shepard method (1976). Based on the obtained data from mentioned analysis, the firing conditions of ceramic (firing temperature and atmosphere) and possible styles of creation of the vessels have been characterised as well as possible raw material sources have been proposed.

Aleksandr Dzbynskiy (Zeshov, Poland)

The metrological system of the Corded Ware Pottery in Central Germany

On the basis of Corded Pottery material from Central Germany this contribution presents several reconstructions of the metrological system of the Corded Pottery Culture in Central Europe.

To this end measurements of the pottery vessels of the Corded Pottery Culture were undertaken (amphorae and beakers). For the main analyses the vessels were measured with couscous. The analyses were carried out with the help of two explorative procedures applied in parallel: histograms and the kernell estimate.

Following the metrological structures of the Corded Ware Culture a reconstruction of the numerical systems of the Corded Ware Culture is proposed. Result: From the distribution patterns of the Corded Pottery vessels' volume a characteristic metrological structure can be demonstrated, which is based on the principle of doubling a unit. This unit is interpreted as a portion which takes different values for the beakers and amphorae.

Further, the metrological structures of the Corded Pottery Culture allow a quadruple system to be deduced.

The process of measurement is explained here as a cognitive capacity, which influences the rational basis of human perception and understanding. Both the cultural historical approach from the Near East as well as the socio-scientific epistemology support the thesis, that metrological abilities enable new social structures and technologies to be secured and managed within a society. Herewith the prerequisites for economic development with the help of a standardized medium of exchange for science,

law and script development are established. Metrological systems are therefore a constitutive element of the civilization process. Their emergence and development surely takes place in the Neolithic, of which the metrological system of the Corded Pottery Culture presented here represents the first complete example. It is assumed here that this is the beginning of a new branch of research which for the Neolithic in Europe requires both extensive material research and an underlying theory and discussion.

Evgeniy Jarovoi (Moscow, Russia)

Ceramic of Yamnaja Culture on the Prut-Dnistrian territory (Early Bronze age)

Monuments of Yamnaja (Pit Grave) Culture on the Prut-Dnistrian territory, in just place, are notable for theirs original ceramic. It occurs almost in every seventh burial and composes about 40% of funeral inventory of this culture. All ceramic – modeled, flat-bottomed, is burned irregularly and has different admixtures in paste. Its surface sometimes is decorated with string ornament. The analysis of 255 vessels, allow to mark out following seven steady series, which include almost 90% of local ceramic.

1. **Pots** (77 or 35% from common number of ceramics).
2. **Jars on circular pallets** (28 or 12%) with grips different shapes.
3. **Jars without pallets** (25 or 11%) with grips different shapes. In comparison with previous series it has 30% less of ornamental ceramics.
4. **Cups** (26 or 11%).
5. **Bowls** (16 or 7%).
6. **Ovoid amphoras** (14 or 6%) of big and medium sizes with grips different shapes.
7. **Amphoras of small sizes** (15 or 6%). Its have different varieties

Two last series are the most typical for the local ceramic.

The rest 10% of ceramics are presented with 8 small series. These are **biconical vessels** (5**), jars** (6), **globular amphoras** (4), **funnels** (3), **round bottomed vessels** (2), **jugs** (3), **asks** (2) and **dishes** (2).

The ceramic of Prut-Dnistrian territory testify to both of local traditions of Yamnaja populations of this region, and about its ties with the closest and distant neighbouring tribes.

GABRIELLA KULCSÁR (ARCHAEOLOGICAL INSTITUTE OF THE HUNGARIAN ACADEMY OF SCIENCES, BUDAPEST)

CULTURAL NETWORKS: TRADITIONS AND INNOVATIONS IN THE BEGINNING OF THE BRONZE AGE IN THE CARPATHIAN BASIN

At the end of the Late Copper Age and in the beginning of the Early Bronze Age both in the Carpathian basin and in Central Europe, from the northern and southern regions of the Balkan to Little Poland similar changes started. At the same time, in the middle third of the third millennia BC cultures maintaining and due to various impacts also transforming Late Vučedol traditions emerge in significant areas of the Carpathian basin.

Based on archaeological evidence, the beginning of the Bronze Age, the Late Vučedol and Post Vučedol period can be characterized with constant changes fueled by the spreading metallurgical knowledge. The similar metal objects (hole axes and chisles) and the pottery (e.g. internally decorated bowls) appearing almost at the same time and in similar form in various cultures confirm long range cultural interaction. The changes were powered by the transition followed by the disintegration of the

earlier Vučedol culture. The connections towards the south (internal regions and the Adriatic coast of the Balkan peninsula and Albania–Macedonia–Thessalia) and the east (Moldova, Ukraine) awakened. The interaction and movement of the Central European (South German, Silezian, Czech and Morva) and Eastern Central European (Little Poland and Ukraine) Corded Ware culture groups also played seminal part in the changes. In this period, slightly following the earlier Late Copper Age relationship network, several group and culture formed. These groups and cultures were similar in many aspects (pottery, metallurgy). These similarities led to the former name of "Late Eneolithic Culture Complex" of this period. Today, the usage of this name is unacceptable due to the old meaning, however, via filling the name with new content, its usage can be justified. Our presentation looks for the explanation of this complex phenomenon.

Oleg Mochalov (Samara, Russia)

The origin of Sintashta culture ceramic

Sintashta culture is one of the famous and richest cultures of Northern Eurasia located on South steppe Ural during the transitional period between MBA and LBA. To mind of many scholars this culture was the center of LBA culture genesis in South - Eastern Europe.

Ceramic reflects multi – component base of pottery traditions including local elements and out impacts. Meanwhile ceramic had certain standard got in the process of changes. Local base is very insignificant and represents by some technological traits and ornamental motives transited from latest eneolithic tribes of Ural and near territories. Many shapes and ornaments had Eastern European MBA origin – steppe (Poltavka culture) Volga region and forest-steppe (Abashevo culture). Links with catacomb areas from Dnieper to Volga where sporadic but from both sides and played role generally only in decor. Some ornament traits let us to link Sintashta with north-west forest Fatyanovo culture. At present the study of the links with far south regions of Caucasus, Trans Caucasus and Middle Asia has real perspectives. South Ural and mentioned region was connected before. In EBA the ceramic of Pit-grave culture (Volga-Ural interfluves) is known in Zarevshan area Middle Asia. Constructively difficult Sintashta shapes (beaker-liked with separated flat bottom) and specific ornaments are distributed only on south territories. It means that Sintashta cattle-keepers had links with south agricultural and other population and it was serious and progressive impact for ceramic changes. Later in LBA in Andronovo time these links increased and became more stable. This paper was prepared under support of RHSF, project # 06-01-91100 a/U.

Sofya Panteleeva (Institute of History and Archaeology, Russian Academy of Sciences, Ural Branch)

Ceramic variability and cultural processes in the Iron Age Trans-Urals: the case study

Multi-settled sites, containing remains of various cultural traditions, dominate in the Trans-Uralian forest-steppe. The Pavlinovo fortress, situated in the basin of the Iset River, is one of such settlements. Two stages of occupation had been determined inside the citadel and dated to the 400-300 Cal BC and 200-100 Cal BC. Ceramics of the Gorokhovo type constitute the considerable part of pottery assemblages of both chronological periods.

The aim of the present study is to compare two main typological subgroups of the Gorokhovo pottery (with incised and comb stamp ornamentation) and to give possible explanation of existence of two decorative traditions within one cultural complex.

As a result of the undertaken analysis it was determined that the Gorokhovo ceramics with incised and comb stamp decoration differ considerably. Moreover, it was traced likeness in morphology and ornamentation between stamped Gorokhovo pottery and ceramics of the Vorobievo type. It is inevitably lead to the problem of correlation of Vorobievo and Gorokhovo cultural traditions, which is being discussed for a long time. Some scholars suppose that both nomads of South Urals and certain groups of the local (including Vorobievo) population took part in the formation of the Gorokhovo culture

(Mogilnikov, Koryakova). Matveyeva considers sites with Gorokhovo and Vorobievo pottery as two chronological stages of one culture.

Materials of the Pavlinovo fortress don't allow to amalgamate Vorobievo and Gorokhovo ceramics to one cultural complex. Typological features of these pottery groups are very distinctive, and transitional types, which took up intermediate chronological position, are not found. Gorokhovo ware with comb stamp ornamentation, so similar to Vorobievo ones, didn't precede to incised Gorokhovo vessels. An analysis of artifact distribution in the layer of the Pavlinovo fortress had testified that both decorative traditions existed simultaneously.

Obviously, the appearance of the new ceramic tradition (with incised ornaments) was caused by penetration of Gorokhovo groups on the Middle Tobol River. Evidently, the part of aborigines was joined to the new cultural formation, and it was reflected on the complex of the Gorokhovo pottery, consisted of two components. Probably, some inhabitants of the Pavlinovo fortress, who were genetically connected with representatives of the Vorobievo cultural tradition, were continuing to produce vessels of the traditional appearance (with comb stamp ornamentation). Interosculation of two cultural groups had left traces on the pottery morphology – so-called "mixed" signs.

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Vodolazhskiy D.I., Vodolazhskaya L.N. (Poland)

Taxonomy of Roman light-clay narrow-necked amphorae of type D from Tanais

Amphorae used for the transport and storage of oil, wine and fish, are a valuable source of information in research on economic and theoretical archaeology. The Roman light-clay narrow-necked amphorae of type D are one of the most widespread types of amphorae in territory of the northern Black Sea coast. The greatest amount of these vessels was typically for Tanais of the middle of IIIth century A.D. Complexes of Tanais constructions were lost at a fire in the middle of III century AD. In them a plenty of such vessels was revealed.

The purpose of the paper is to describe taxonomy of light-clay narrow-necked amphorae of type D of IIIth century A.D. from Tanais.

Statistical methods, the method of numerical taxonomy, the method of amphorae volume calculation on mathematical model of light-clay narrow-necked amphorae type D, as composite solid of revolution consisting of three simple solids of revolution, generated by lines of the second order (conics), method of measurement of key parameters on amphorae profile portrayals in scale 1:1, method of measurement by millet and water of volume of amphorae were used.

Taxons based on standards of the light-clay narrow-necked amphorae of IIIth century A.D. of type D from Tanais are offered in the paper. High standardization and large number of the light-clay narrow-necked amphorae of type D has allowed to make correct statistical research by definition of amphorae standards.

The description of process of standards calculation on the basis of variational interval series of the measured and calculated amphorae volumes and the description of parameters of amphorae standards are resulted in the paper.

The sample has consisted of Roman amphorae from collection of the Archaeological Museum - Reserve "Tanais" (Russia).

The received result testifies that in taxonomy of amphorae there are two equal in rights dominating taxons. All light-clay narrow-necked amphorae of type D from Tanais can be attributed or to dominating taxons, or to intertaxons space, or to space of random deviations from taxon each of standards.

Taxonomy approach gives the new tool of the analysis of the big and homogeneous array of the light-clay narrow-necked amphorae of type D. This approach will allow to receive additional information

on the accompanying the light-clay narrow-necked amphorae of type D on excavation archeological artefacts too.

Karlene Jones-Bley (University of California, Los Angeles, USA)
Ritual Vessels: Shapes and Sizes

Ritual is a part of numerous aspects of life but particularly religious aspects. Frequently ritual involves the consumption of a liquid such as wine as seen in many modern Christian ceremonies. The vessel that holds the wine can also take on importance and this is often manifest in elaborately decorated vessels such as the Irish Ardagh Chalice, which is made of gold and inset with precious stones. Earlier ritual vessels were made of clay but were frequently elaborately decorated with symbols (symbolic) ornaments, or are made in a special form that suggests the vessel was not used for ordinary purposes. This paper will discuss two types of these vessels, the first are vessels of unusual shape that are frequently completely decorated and have evidence of burning, and the second, vessels which are of a more ordinary shape but that have specified decorations placed on the outside bottom of the vessels. These latter vessels suggest that they held some sort of liquid that was drunk or used as libation and that the bottom decoration indicated to the observers of the ritual that the vessel had been emptied.

Ekaterina Dubovsteva (Russia. Ekaterinburg)
Natural ornamentation implements: matter of revealing and interpretation.

Pottery is the vastest material extracted by the archeological excavations of the Neolithic period and later epochs. So it is really surprising that the instruments being used in pottery production are found so rarely. What are the reasons for this? Is it determined by low rate of preservation of the artifacts or there can be any other explanation?

Natural forms are known by the ethnographers to be used in different technological operations. They served also as ornamentation tools. It was in the early XX century, when an assumption that different natural objects could be used as the pottery design implements occurred. Though being rather widely spread in Neolithic cultures of the Eurasia tools of this kind haven't been investigated properly till nowadays. Some types of the natural ornamentation tools such as animal jaws and bones, fossil mollusks, diverse plants were revealed due to the trace science achievements and experimental reconstruction of the ancient ornaments. This survey is dedicated basically to the issues of the animal's jaws and bones as the ornamentation tools for the Neolithic pottery in West-Siberian area (Bystrinskaya and Sumpanjinskaya cultures).

It is rather difficult to interpret patterns of this kind. Often happens that different traces (pits, grooves, scratched lines) made by animal's bones are not recognized as an ornament and therefore they forfeit their significance (their symbolic function). Russian archeologists are still trying to find a method to decode these patterns using function-and-technology approach. [Kalinina. 1995] The semantic content belongs in this case not to the representation but to the implement it was made by. From one standpoint it might be viewed as a magic technological operation, but from the other one – as an interrelation between decoration process and the ancient man's totemic beliefs.

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