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UNIVERSITY OF SOUTHAMPTON

FACULTY OF HUMANITIES

Archaeology

Volume 1

Tradition, Practice and Creativity: An Exploration of Middle and Late Bronze Age Belegiš Cremation Urns

by

Sarah Coxon

Thesis for the degree of Doctor of Philosophy

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ABSTRACT

FACULTY OF HUMANITIES

Archaeology

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TRADITION, PRACTICE AND CREATIVITY: AN EXPLORATION OF MIDDLE AND LATE BRONZE AGE BELEGIŠ CREMATION URNS

Sarah Anne Coxon

Understanding similarity and difference is perhaps a cornerstone of archaeological enquiry. What is it that makes two objects similar and what is it that makes them different? Furthermore, how do we distinguish and explain these similarities and differences?

This thesis explores similarity and difference within Middle and Late Bronze Age Belegiš ceramic urns from the region of Vojvodina in Serbia. This material comprises a corpus of cremation vessels that are similar to each other, yet also display differences, most noticeably in decoration. It therefore presents itself as an ideal case study to explore similarity and difference. Traditional approaches to the Belegiš phenomenon have rested upon typological classification within a culture-historical paradigm, meaning that similarities and differences have been explained in terms of cultural ethnicity, both spatially and temporally. Yet these attempts to categorise Belegiš urns have fallen short of sufficiently dealing with and explaining the complexity of the material, leading to confusing and often contradictory typological narratives.

In order to redress these issues and elucidate the underpinnings of similarity and difference, this thesis focuses on how the vessels were made. The analysis of technological traces is used to shed light on three aspects of production; tradition, practice and creativity. Each of these three axes is suggested to provide a framework for exploring commonalities and variation within vessel manufacture.

Exploration of Belegiš ceramic technology through tradition offered a macro-scale investigation and enabled the isolation of aspects of production that were shared across the region of Belegiš distribution. Analysis of the dataset demonstrated a clear core set of manufacturing principles. Despite this, urns from different sites show differences in the way in which the guidelines of tradition were used. It is suggested that trends in the data demonstrate that there were three communities of Belegiš practice; eastern Srem, southern Banat and southern Bačka. It is additionally suggested that creativity within Belegiš manufacture accounts for some of the variation present which sits within the relationship between maker and the collective. Each example of creativity is shown to be a reworking of existing manufacturing practice.

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DECLARATION OF AUTHORSHIP

I, Sarah Coxon, declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Tradition, Practice and Creativity: An Exploration of Middle and Late Bronze Age Belegiš Cremation Urns

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. None of this work has been published before

Signed:.....

Date:.....

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Chapter 1
Introduction

1.1 Overview

At the core of all archaeological investigation is the understanding that observable patterns within the material record are in some way meaningful (Sørensen 2015:85). Running through the whole discipline is the implicit understanding that similarities and differences within material culture offer us clues about the past and its people. Consequently, ever since archaeological enquiry first began, we have been seeking ways in which to try and make sense of these patterns.

During the infant stages of our discipline, two key approaches were implemented that attempted to get to grips with and create an explanation for patterns of similarity and difference in material culture. The first was the concept of typology that explained differences in object morphology and artefact design in terms of change over time[1]. Typology is therefore concerned with temporality as a means of explaining the dynamic nature of material culture. Complementing this was the birth of the culture history paradigm[2]. This focusses on the spatial distribution of artefact characteristics and explains similarities and differences in the archaeological record as being indicative of different cultural groups, with one group being signalled by occurrences such as certain burial practices and vessel types, and another cultural unit being reflected by a different set of material culture and practices.

Both of these approaches have had longevity within the discipline and are still somewhat embedded in the ways in which we deal with material culture today in many archaeological circles. That being said, their appropriateness for creating solid and representative narratives of the past has been questioned by a swathe of archaeologists, namely those working within Anglo-American traditions (Miller 1985 et al). Their desire to reject typology and culture history is rooted in the argument that neither approaches sufficiently deals with the diversity present in the material record, nor do they create a satisfactory people-orientated interpretation. In particular there has been a noticeable attempt to do away with typology, and in its place the focus for some archaeologists has shifted on to the investigation of

[1] It was Oscar Montelius, a Swedish archaeologist working in the late 19th century, who refined the concept of typology and seriation as the placement of artefact types in chronological order.

[2] 2 This way of thinking through material culture was the birth child of Gustaf Kossina, a German linguist and archaeologist at the turn of the 20th century who was focused on the origins of the German people, and who advocated the use of archaeology to promote German nationalism. Gordon Childe adopted Kossina's ideas for his own research, most noticeably for the prehistory of the Danube region (Childe 1929)

technological knowledge in order to probe the social networks that these objects operated within (Budden 2007, Kohring 2012, Knappett 2005, Michelaki 2006 and 2008). Although these approaches have offered new insight into how people made things and how they may have interacted with one another within their community, a discussion of similarity and difference within and between sets of artefacts has been kicked to the curb. Typology has been rejected yet with no real acknowledgement that there is still and always will be a need to classify material in order to make sense of it (Sørensen 2015). There has been no real replacement in approach that encourages a consideration of how the similarities and differences that constitute previously assigned typological categories were generated by the very people we wish to understand.

The aim of this thesis is to reengage with what constitutes similarity and difference between objects, and more specifically within one class of artefact: Belegiš cremation urns of the Bronze Age. This thesis explores similarity and difference in the context of ceramic manufacture; first, to bring the concepts of similarity and difference and our need for engaging with them back to the forefront of archaeological discourse, and second to explore how similarity and difference between artefacts within assemblages was generated. As previously introduced, a recent trajectory within the discipline has been to look at technology as a means of understanding the relationship between material culture and society. The concept of tradition has been used to focus on manufacturing conformity (Sackett 1985), and manufacturing practice (Kohring 2011) has been concerned with how different groups articulate technological knowledge in various ways. Both of these concepts provide useful angles from which to engage with and explore similarity and difference within vessel manufacture. In addition, the role of the individual maker3 is looked at more closely by bringing in the concept of creativity; creativity has been argued to be an important facet of production because it is a mechanism that drives variation and change (Liep 2001:1). Therefore the concepts of tradition, practice and creativity are used within this thesis as lenses through which to discuss the technological processes that may contribute to similarity and differences between artefacts.

The temporal and geographical focus of this work is the Middle and Late Bronze Age Belegiš phenomenon, the core of which resides in the region of Vojvodina in Serbia. The Bronze Age in Europe was a dynamic period of prehistory marked by the introduction and widespread adoption of metal technology (Kristiansen 1998, 2000; Vankilde 2007). The study of an age defined by the use of bronze has often focussed extensively on its signature commodity (Earle 1997; Kristiansen and Larsson 2005), although in more recent years the study of pottery has begun to factor more prominently in discussions of Bronze Age society (Budden 2007, 2008,

Budden and Sofaer 2009; Kreiter 2006; Michelaki 2006, 2008; Sofaer 2009). For archaeologists in the Balkans however, ceramics have simply served to reflect spatial and temporal differences and so-called cultural boundaries. This culture-historical paradigm limits interpretation by assuming that archaeological material directly reflects emic cultural units and that variation mirrors differences in cultural ethnicity, both spatially and temporally. The culture historical lens is therefore simply not sufficient to deal with the complexity of material. It presupposes the reasons for shifts in material culture whilst simultaneously glossing over the role that individuals played with the creation of material similarity and difference.

The Belegiš is an example of a Middle and Late Bronze Age ceramic phenomenon that has been examined through the lens of culture-history. Found in settlement and funerary contexts, these vessels date from 1400-1000BC (Tasić 2002). The material comprises an assemblage of vessels that are similar to each other in as much as they are ceramic vessels, with similar morphologies and similar types of decoration. Yet they also display differences, particularly in decoration. The interplay between Belegiš similarity and difference has been a source of frustration to those seeking to understand the phenomenon. These vessels have been placed into confusing and sometimes contradictory typological sequences. Yet their complexity offers the potential to explore tradition, practice and creativity through investigation of manufacturing commonalities between vessels and also vessel differences.

As was remarked upon above, within the social sciences creativity is seen to be a mechanism that drives variation and change (Liep 2001:1). Given the complexity and diversity of the Belegiš phenomenon, alongside the fact that this doctoral research was funded by the HERA funded project Creativity and Craft production in the Middle and Late Bronze Age (CinBA), the initial research sought to probe the materialisation of creativity within the context of the Belegiš. However, after preliminary engagement with the vessels it became clear that creativity as a stand-alone concept did not accurately reflect the internal logic of the material, nor did it explain all of the variation that the phenomenon displayed. Perhaps inevitably, as the research evolved, the concept of tradition, as a socially shared approach to vessel manufacture, and practice, as the way in which the tradition was enacted, began to emerge. It subsequently became obvious that in order to shed light on Belegiš similarity and difference, a multi scale exploration of tradition, practice and creativity was required, and that these concepts acted as lenses through which to explore similarity and difference within Belegiš manufacture. Further still, it became apparent that these three concepts offered a means of investigating conformity and variation within the material at varied levels of analysis. Tradition offered a macro scale in order to isolate and explain regional commonalities and practice gave smaller scales of analysis that informed of the community and the individual. The

focus on creativity also enabled insight into how individuals manipulated tradition and practice. Consequently, the material itself began driving the development of the research questions.

In the quest to elucidate similarity and difference within the Belegiš phenomenon, the following questions arose:

- What are the commonalities running through the Belegiš phenomenon?
- What are the differences between vessels within the assemblage?
- How do these commonalities and differences relate to tradition, practice and creativity?

This research uses the analysis of technological repertoires to explore how these three aspects of manufacture relate to each other. Examination into vessel conformity and variation from the perspective of tradition, practice and creativity required a detailed methodology rooted in the investigation of how the vessels were made. Through analysis of technological traces, a rich dataset was obtained and analysed to give a detailed narrative of the manufacturing repertoire. Trends within the data were picked out to probe tradition, practice and creativity, and subsequently explore similarity and difference.

1.2 Structure of the Thesis

In Chapter 2 the ways in which similarity and difference have been approached by the discipline of archaeology are presented. Methods such as typological classification are discussed and alternative approaches are explored. Building upon this, the concepts of tradition, practice and creativity are brought into the discussion and their relevance to the study of similarity and difference within the archaeological record is explained. It is argued that these three concepts provide a multi scale set of lenses from which to document how conformity and variation were generated at three levels; regional society, local communities and the individual. Finally, the investigation of technological repertoires as a gateway to assessing tradition, practice and creativity is discussed.

In Chapter 3 an overview is given of approaches to Bronze Age material culture in the region of Vojvodina. Rooted in culture-history, as a way of trying to make sense of similarity and difference within the material, Bronze Age chronology as it is currently understood is outlined, alongside a discussion of regional so-called cultural groups. Following on from this, the Belegiš phenomenon is presented and the sites which comprise the sample included in this research are discussed. It is argued that traditional typological analysis alongside culture-historical narratives of the material has not sufficiently enabled an understanding of how similarity and

difference within the phenomenon were generated, nor has it informed about the people who were making these vessels.

Chapter 4 presents the methodology and therefore the step by step approach that was taken to collect the dataset used for analysis. Aspects of technological repertoires and the traces they leave upon the vessels are discussed in detail.

Chapter 5 presents and discusses the commonalities that run through the dataset in order to elucidate Belegiš tradition. Commonalities that run throughout the entire assemblage of vessels are suggested to be demonstrative of tradition; a stable set of manufacturing rules that underpins the production of all vessels. Bar graphs are included to give a visual representation of the data and statistical analysis is included where appropriate.

Chapter 6 presents and discusses Belegiš practice in terms of community and the individual. The data is represented in the form of pie charts in order to show and discuss similarities and differences in manufacture between sites. Communities of practice are suggested, demonstrating how practice differentiated according to where a vessel was produced. It is argued that this highlights how knowledge systems differ according to place and time and that this resulted in differences between the vessels. Individual practice is explored through the examination of technical gestures. These are used to consider mechanisms of learning within communities of practice.

In Chapter 7, specific permutations of creativity, such as novelty and problem solving that have been explored within other disciplines such as psychology and sociology are explored within the dataset. These are used to reflect upon how the individual engaged with networks of technological knowledge in order to produce variation.

Finally, Chapter 8 summarises the aims and findings of the thesis and discusses the degree to which the research goals were met. Avenues of further research are presented.

Chapter 2
Understanding Similarity and Difference

2.1 Introduction

The concept of typology lies at the foundations of much archaeological enquiry and has been a staple methodology for dealing with similarity and difference within the archaeological record. We intrinsically know that objects of a similar function can look different and be made in similar ways. Typology, concerned with the relationship between form and change over time, has simply been a way to engage with and deal with the variation present in the material record. The construction of such a concept (and methodology) therefore signals the underlying and implicit understanding that similarities and differences within the archaeological record are in some way meaningful and offer us clues about the past (Sorensen 2015:85). Despite the widespread use of typological systems of classification, there has been an increasing recognition of the limitations of these approaches in sufficiently dealing with variation within assemblages. Moreover, the assigning of objects into categorical groups has often taken place without satisfactorily including narratives of the very people who made and used them. In a response, the last two decades have seen an increase in research that has been more concerned with sociality and placing objects in social context to form people orientated narratives of the material culture. Arguably however, this trend has been all too quick to abandon the concept of typology, instead of reflecting on why such a system of thought was implemented in the first place.

Within this chapter I discuss the traditional typological approaches to ceramic assemblages. I then present more recent technologically-focused ways of probing and explaining similarity and difference through the lenses of tradition and practice. To do this I draw upon global examples and where appropriate, Bronze Age examples. Finally, I explore and advocate the use of the concept of creativity as an additional tool for thinking through the interplay between similarity and difference.

2.2. Traditional Approaches to Ceramic Similarity and Difference

2.2.1 Typology

Typology has been the discipline's most ingrained means of identifying the similarities and differences of material culture. Typological classifications are therefore a response to the observation of noticeable patterns within material culture (Sørensen 2015:85).

Typology, by definition, is a 'conceptual system made by partitioning a specified field of entities into a comprehensive set of mutually exclusive types, according to a set of common criteria dictated by the purpose of the typologist' (Adams and Adams 1991:91). Two observations can be made from this definition. First, a typology has specified boundaries, and second, that these systems of classification are subjective (Hermon and Niccolucci 2003). The formation of typologies is based on morphological and functional characteristics. In the case of ceramic assemblages, vessels are categorised into groups according to co-occurring attributes such as shape, colour and decoration. These typological schemes draw upon an evolutionary perspective of difference.

2.2.2 Decoration

Sørensen suggests that typologists have a tendency to treat similarities in a simplistic manner and take these shared characteristics for granted, rather than probing their significance in terms of social behaviour (1997:182). The same can be said of typological approaches to variation. Variation is often shown but rarely explained. Exemplifying this, similarity and difference in both form and decoration have been used to study both change in material culture over time (Deetz 1965) and spatial patterns. Yet what is intriguing, and of relevance to the highly decorated Belegiš material that is the focus of this thesis, are the ways in which decorated pottery has been approached within typological frameworks. With assemblages that afford a high degree of decorative variation, categorisation has centred on the following; methods of the classification of decoration, temporal and spatial trends of analysis, and a consideration of the function, and therefore the meaning, of decorative 'style' (Graves 1998). All of these approaches are rooted in the underlying assumption that differences in ceramic decoration have significance and reflect social groupings (Freidrich 1970). This is reflected upon in more detail in Chapter 3.

Attempts to classify decorative motifs through methods of codification have fallen into two categories; hierarchical and non-hierarchical (Douglass and Lindauer 1988).

Hierarchical traditions classified ceramic style taxonomically (Dunnell 1971). Ceramic decoration, notably in southwestern prehistoric ceramics in America, was classified according to methods proposed by Amsden (1936) and Colton and Hargrave (1937). This methodology initially divided decoration into patterns and fillers (Amsden 1936) and was later modified allowing for fillers to be sub-divided into 'motifs' and 'elements' (Colton and Hargrave 1937). The emphasis was on the hierarchical sequence of decoration. However, the criteria for analysis and definitions for elements and motifs were not clearly defined and consequently these structural methods of interpretation have since been critiqued for their subjectivity and non-replicability (Plog 1980:40).

Hierarchical approaches to decorative analysis still continued to factor heavily in ceramic analysis. Attempts were made to modify hierarchical schemes and apply them in new ways to counteract these problems (Washburn 1977 and Zazlow 1981). Demonstrating this, Plog (1980) recognised the issues inherent within existing approaches to ceramic decoration. He deconstructed decorative units painted onto south American prehistoric pottery and classified them as attributes and attribute states; the attributes being the overall shape or form of design, and the attribute state referring to whether they were made up of circles, triangles or lines, also understood as basic geometrical states (1980:43-47). In essence Plog was attempting to describe the potter's sequence of decisions during the process of decoration. However, there were motifs that could not be classified into a two-level design hierarchy. Additionally, it was argued that the assignation of motifs into primary and secondary categories based on how often they are used may not necessarily mirror how the potter viewed the process of decoration (Jernigan 1986:9).

As a response to these challenges attempts were made to use a non-hierarchical method of decorative analysis. Jernigan (1986) defined decorative style as a 'repertory of distinct recurrent design schemata habitually used by an individual, social group, a community, or any other distinguishable socio-cultural entity.' He argued that placing decoration into sub-categories such as elements and motifs 'needlessly complicates comparison' (1986:9) and consequently called for a schematic approach in the analysis of decoration. Based on work of the art historian Gombrich (1960), Jernigan defined a schema as 'a configuration or pattern of configurations for which we have evidence that the configuration of pattern was conceived as a distinct unit by the makers (1986:9). These units of decoration can therefore consist of one motif or it can be made up of a number of different elements and ultimately it is defined by '*how* the potters *used* the component' (1986:9). Jernigan applied this method to ceramic material from the Reserve Phase in Cibola, in the Southwest USA, in attempts to codify ceramic decorative variation.

Although the shift of emphasis on to how a potter used decoration was a step forward in thinking through decorative difference, the non-hierarchical approach used glossed over intricate variability and in a similar fashion to the work of Plog (1980) attempted to pigeonhole decorative motifs meaning that subtle differences were lost. Additionally, Jernigan tenuously suggested that the units of decoration equate to units the potter would have known and understood, yet these units as noted by the author may not fully represent an emic comprehension of decoration. His approach was heavily influenced by art history and was therefore concerned with analysis of the end configuration as opposed to the decisions made in the process of decorating (Hegmon 1992:518). Despite another attempt at understanding the relationship between decorative similarity and difference, this approach disregarded the processes that contribute to the final decorative outcome and again only went part way in explaining decorative variation. At a more basic level these hierarchical and non-hierarchical approaches to decoration are underpinned with the idea that similarities and differences in object decoration is meaningful.

Anglo-American trends often discuss decorative variation in terms of style. Throughout the literature style has been defined and approached in a multitude of ways, for example being based on function and choice (Sackett 1982), being a means of non-verbal communication that speaks of identity (Wiessner 1983) and a way of doing something (Hodder 1990). Hegmon (1992) attempted to disentangle how archaeologists view style by asking the question 'what does style do?' In her review she brought together various aspects of style such as technology, mechanisms of learning, symbolic meaning, social differentiation and power and social inequality. She concluded that although there isn't one single integrated definition of style, it is commonly seen as playing an active role within ceramic similarity and difference (1992:531). Style may therefore refer to a set of manufacturing procedures or it could be used to discuss a particular appearance of an object, both of which could be completely unrelated to each other. On a side note, it seems therefore that as a concept, style is not explicit enough, encompassing many facets. For this reason the concept of style is purposefully rejected throughout this thesis. That said, once again, within investigations of style there is the underlying understanding that similarities and differences offer clues for understanding the past.

2.3 Rethinking Similarity and Difference

Traditional structuralist analysis, although an attempt to get to grips with variation, has fallen short of sufficiently investigating the tension between similarity and difference. Although typology is regularly applied to archaeological material, it is

often without sufficiently questioning of why getting to grips with similarity and difference is important (Sørensen 2015). As Miller pointed out, the process of typological classification itself also 'ignore[s] the nature of category variability found in the real world, becoming an overused mould into which things are fitted, rather than adapting to meet the challenge of variability' (1985:7). In recognition of the challenges embedded within such approaches, the notion of 'fuzzy set theory' (Hermon and Niccolucci 2003) was applied to archaeological material. Based on mathematical principles (Zadeh 1965), this approach does not consider objects to be members or non-members of a set, but instead good or bad representatives of the set (Lakoff 1973). This therefore incorporates a consideration of the range of variation which they term variability. Differences are not simply pigeonholed but are instead assessed.

Hermon and Niccolucci's (2003) approach used computer software to place artefacts into sets using fuzzy logic, meaning that each group did not have specific rigid boundaries. This is an example of how the discipline has in recent years attempted to implement new methods of classification that take into account the variability present within groups of artefacts. Such a methodology, although useful, comes without real consideration of how and why similarity is generated, and also how and why differences occur. What is needed therefore is an integrated approach that simultaneously explores the interplay between artefact similarity and difference alongside an in depth investigation of the social processes and behaviours that contribute to it.

In recent years the discipline has begun to look at and explain similarity and difference from the perspective of production and has taken steps to expose that which underpins similarity between objects and also the variation between them. This is particularly evident within ceramic studies, beginning with the work of Peacock (1981) and Van der Leeuw (1977). A focus on production has enabled exploration of the role of individual makers, groups of practice and tradition. This in turn has paved the way for more developed insights into the factors that afford variation and has encouraged more socially focussed narratives of the material. It is argued below that tradition, practice and creativity offer three interlinked concepts that can shed light on pottery manufacture by simultaneously taking into account similarity and variation. Given below is a discussion of how each of these concepts have been used within archaeological enquiry and their potential for gaining insight into the processes that contribute to similarity and difference within ceramic assemblages.

2.3.1 Tradition

Traditions are long-standing beliefs, customs and established methods of practice (Ingold and Hallam 2007:9). In essence, they are socially accepted rules that shape how something is done. Within this thesis the concept of tradition is therefore used to explore continuity. Although they are enacted by individual agents (Glassie 1995), traditions represent a broader social milieu in which action is embedded. Tradition binds social activity because it is a shared understanding of what is appropriate. Understanding tradition has thus been a means for archaeologists to explain artefact similarity and variation from the perspective of social preference and has often gone hand in hand with technological explorations and investigations of object 'style' (Gosselain 2000). However, given that within this thesis the concept of style is purposefully rejected, it is argued that tradition and style do not necessarily need to be investigated together. Although the concept of technology is introduced within this section its application in archaeology is discussed in more detail later on within the chapter.

Tradition in the Making

As was stated above, tradition is regulated social action that signals continuity and stability. It has been argued to order socio-cultural life (Sawyer 2009) and is the creation of the future out of the past (Glassie 1995). Unity and distinctiveness in traditions are argued to be constantly reinforced through memory and transmission (Shil 1981:38), meaning that they become templates for social behaviour (Ingold and Hallam 2009). In relation to material culture, traditions are often embedded within the manufacture of an object.

Archaeological narratives of tradition have been heavily influenced by sociological schools of thought (Bourdieu 1979 and Giddens 1979). Such material-based investigations have benefitted from a focus on technological sequences, and consequently the study of technology has often gone hand in hand with discussions of tradition. This has resulted in a focus on the underlying processes embedded within material conformity. The process of making an object is argued to be guided by social rules (Pfaffenberger 1988). Technological templates therefore mirror the actions of individuals that reflect wider social norms. Objects are thus expressions of shared values and social relations that are bound up with craft practice (Dobres 2000, Gosselain 2000, Lemonnier 1992, Mauss 1935). Tradition in this context therefore results in conformity. Sackett (1985) has suggested that makers tend to follow a specific tradition of practice and are often reluctant to change their methods. Ethnographic research into tradition has illustrated that technological action tends to be very specific despite the numerous alternatives (Gosselain 1994, 2000, Lemmonier 1992, van der Leeuw et. al. 1991).

Technological traditions have been argued as markers of identity mirroring the ways in which people express their similarity and cultural roots (Gosselain 1998). For this reason the concept of tradition has been used to delineate social and cultural groups within the archaeological record (Freidrich 1970; Gosselain 2000) and has been a conceptual framework for investigating spatial and temporal differences in social patterning. At the other end of the spectrum, it has been noted that the choices embedded within traditional repertoires allow for expression of the individual (Gosselain and Livingstone Smith 2005). Thus interaction with tradition has not only been argued to forge and maintain social and cultural identities, but has also been suggested to shape the identity of the individual within her/ his community (Budden and Sofaer 2009; Kreiter 2007).

Despite the fact that the archaeological community seems to acknowledge the importance of tradition, it appears that within more recent archaeological literature the concept of tradition is taken at face value without being satisfactorily explored. The most recent example is Rebay Salisbury, Brysbaert and Foxhall's (2014) *Knowledge Networks and Craft Traditions in the Ancient World*. Although tradition is in the title, throughout the entire volume the nature of tradition is not sufficiently explored but is instead taken for granted. Craft technology is probed but this is not necessarily the same as tradition as temporal continuity.

Traditions as Dynamic

In the search for stability and technological continuity, the material repercussions of technical behaviour that does not conform to social convention have been frequently overlooked. Although on one hand tradition denotes stability, it has also been argued to be dynamic. Changes in technological traditions, marked by material differences, are seen to be a result of complex interactions between technical systems and social contexts (Roux 2003:1). Tradition is therefore a multi-facetted and complex process, seen to occur both within technological and social systems. Initially, shifts in technology and society were seen to mutually influence and reinforce each other in a continuous feedback loop (Leroi-Gourhan 1973). Such a model of explanation, however, failed to take into account triggers of change. Since then, efforts have been made to reject the distinction made between technology and society by arguing that material culture is constitutive of society (Dobres 2000). Building on such ideas the Dynamic Systems Theory was introduced (Roux 2003), which centres on the processes underpinning the transformation of technological systems. Pivotal to this approach is the notion that 'changes that occur within any constantly evolving system are influenced by a multitude of factors that interact in complex ways' (Roux 2003:6.). Change reflected in differences between artefacts is

therefore seen as dynamic rather than hierarchical and is not simply a process of adaption in a static unilinear system but occurs as a result of complex interactions. Roux therefore connected real time with the long durée (2003:7) to create a more holistic way of looking at change in technological systems and the material consequence of these interactions.

Roux (2003) attributes change in tradition to internal and external interactions between the technical task, which is the transformation of raw materials into the finished object, the environment, and the subject who carries out the technical task. She additionally makes the distinction between different types of change, including invention, which she sees as local change, and innovation, which she treats as change that becomes widely accepted and incorporated. Such approaches to change have benefits as change is seen as a result of dynamic interactions and is attributed to many co-dependent factors. Yet the role of the individual in such material differences is still under theorised; how these processes play out is in need of further more detailed probing. Furthermore, traditions are often referred to as dynamic (Hallam and Ingold 2007) and yet it seems that archaeologists have yet to sufficiently show *how* they are dynamic and attempt to explain why. What is needed is an integrated exploration of similarity and difference including an understanding of practice at both the level of community and the individual, in order to discuss how people were expressing their craft, how they were interacting with each other and the role they played within their communities and wider social arena. Underpinning this is the reflection that traditions have the possibility of being enacted in multiple ways.

2.3.2 Practice

Practice refers to the technical behaviour of individuals within their social arena. At this level of enquiry, a focus on practice is a bottom up approach to the investigation of similarity and difference. Exploration of practice relies upon distinguishing the physical processes involved in creating an object, and can be examined at two levels; by locating groups of people that practice in similar ways and also investigating how the individual within these groups practiced their craft. With this in mind, the investigation of technology, as the application of manufacturing knowledge, once again creates a keyhole through which we can explore technical actions made throughout vessel manufacture and therefore elucidate practice.

Technology: The Focus on Process

Over the past three decades, technology has become a much investigated topic within the discipline of archaeology but is a concept that has been used in different ways to elucidate different topics of research. Below is a presentation of the development of how technology has been thought through and its application to archaeology, which creates a platform for a discussion of practice.

In a review of approaches to technology, Dobres has argued that investigation began with considerations of the role of technology within societies (2010:103). Often conceptualised as the link between people and objects, this avenue of research has been somewhat interdisciplinary, influenced by philosophy, sociology and anthropology. Philosophical discussions of technology began in the 18th century with Kant who considered technology to be a knowledge-based experience that followed a set of procedural rules. He distinguished technology from the object itself and in doing so indirectly linked socially mediated experience with material technology (Dobres 2000:72). Dessauer elaborated on Kant's ideas emphasising the embodied nature of creation (2000:73). Overlapping with this way of thinking through technology, Mumford (1967), who was interested in the role of technology in human development, brought considerations of cognition into discussions by arguing that technological action stems from the mind and is driven by aspirations for creative self-realization. He wanted to disassociate the concept of technology solely from use and production of tools, asserting that species other than *homo sapiens* have demonstrated technological behaviour. For this reason, he argued that it was not so much the tool, but the mind that was integral to technology. Ortega y Gasset added to the evolutionary orientated work of Mumford by arguing that although technology was inspired by creative imagination and a drive for self-realisation, it was through the social context in which this happened that humans became self-knowing active agents (Dobres 2000:79). This discourse offered a window from which to begin viewing technology as a complex and dynamic network embedded within a social structure (Dobres 2000:80).

Parallel to these discussions, anthropologists and sociologists have also been thinking through the relationship between technology and society. The work of Mauss (1934) is perhaps the most influential to the study of technology within archaeology. He held the view that technology is complex, dynamic and inherently social (Dobres 1999:127). For Mauss, technology incorporates repeated technical sequences that become routine. These are mirrored by the use of tools as a result of mindful decisions (Schlanger 2006). Terming these techniques of the body as *habitus,* they were argued to be pivotal to the transformation of natural resources and the continuity of cultural traditions. Central to such a notion was the idea of the body; Mauss' work advocated the concept of the '*homme totale'* in which a person's

body is the primary tool. The techniques gesticulated through the body additionally were deemed to be socially and culturally constructed through learning strategies. Leroi-Gourhan (1943, 1945, 1958, 1964, 1965) built on the concept of habitus and implemented an analytical framework that investigated the operational sequences inherent within technological systems. He later used this methodology for archaeological use, exploring Magdalenian late Upper Palaeolithic lithic technology at the site of Pincevent, near Paris (Leroi-Gourhan and Brézillion 1972). This application, which only centred on the production of stone tools, has since been criticised for being too narrow (Edmonds 1990:58). Additionally, Leroi-Gourhan's work belonged to an evolutionary paradigm; he was concerned with the linear development of technology in prehistory, and omitted consideration of technological differences that were contemporary with each other.

Giddens (1976) advanced the idea that technology is a social process, an approach that rippled into the discipline of archaeology. Giddens concentrated on the human actors of production that enact in a system structured by social constraints and rules. Again, although such a view sees technology as a socio-technical network (Pfaffenberger 1988), it has been argued the people embedded within it are inadvertently portrayed as passive receptors of technology (Dobres 2010). Technology was seen only to shape people and not the other way around. In attempts to rectify this, cultural reason ontologies hold the view that 'people mattered' at the heart (Dobres 2010:106) and have made the first step in abolishing the technology/ society duality by treating material cultural and society as inseparable (Roux 2003:1). It has been put forward that belief systems and social rules shape the material world (Dobres 1999, 2000, 2010; Ingold 1988). Technology is therefore argued to be grounded in, and reflect, a symbolic and structured way of existing in the world. Central to this, and reconfiguring Mauss' (1934) ideas, is the role of the body which is seen as a mindful and sensual entity through which socially conditioned human actors materialise and also transform their world (Keller 2001). Such an approach is informed by phenomenology, and unlike evolutionary-based perspectives, treats technology as the embodiment of human action and interaction as opposed to a reaction to external factors and pressures. A culturally orientated perspective of technology explores the dynamic and complex making and remaking of practice by centring on the social agent.

Communities of Practice: Technology in Context

The concept of technology has been used by the discipline of archaeology in various ways to investigate societies from different viewpoints. One such angle has been the social organisation of manufacture. In particular, the organisation of pottery production has been a considerable focus in the ceramic research arena. This

began with the pioneering contributions of Peacock (1981) and Van der Leeuw (1977) that used the study of technology to group pottery manufacture into 'modes of production'. This approach to archaeological ceramics was implemented to explore the gender of makers, their economic relationship, the investment of time and raw materials and the relationship between maker and consumer. Variation has been a key pillar of investigation. Miller (1986) for example used a 'framework' based analysis to examine variability of Dangwara earthenware pottery from contemporary India. Miller's approach was a step towards new ways of thinking through artefact variability. It offered a new narrative by using technology as a lens through which to document differences, explaining variation through a discussion of social context and organisation. Although there are similarities in the material, Miller's focus was purely on the variability within categories. The introduction of such frameworks for ceramic research began to place manufacture into its social setting and influenced countless other ceramic researchers to ask similar questions of their material (e.g. Costin 1991; Rice 1991).

On the back of Costin's (1991) paper that outlined a technologically focussed methodology for investigation of the economies of production, Costin and Hagstrum (1995) attempted to explain similarity and difference by thinking through the relationship between craft specialisation and social organisation. Technological profiles of ceramics from Late Prehispanic Highland Peru were ascertained from detailed analysis. Variation in skill, labour investment and standardisation established differences in the social organisation of production between different pottery types. Homogeneity, and therefore similarities in clay sources revealed by petrographic analysis indicated that Wanka type cooking vessels were produced by small household set ups (1995:626–7). On the other hand, jars of Inka style were produced from different clay sources, were well made and sporadically distributed (1995:627). As an elite item, the authors associated these vessels with workshop production. Similarities and differences within the material were interpreted as levels of specialization, and were thus argued to be responses to social, economic and environmental factors.

Other studies have been concerned with the how variation is not only generated but subsequently transmitted. As an example, Eerkins and Lipo (2005) worked within an evolutionary perspective of variation to investigate the role of error and the processes of transmission that amplify, reduce or maintain such variation. Such a perspective sees variation as a mutation that is passed on within a given cultural environment, and as with typology, embedded within this is the concept of time and linear change. Despite the fact that there is a danger that individuals of the past are seen as passive careless transmitters, such an attempt to explain variation does bring into question where the role of error fits into variation, and other causal

factors such as habitus, mechanisms of learning and how this relates to the social arena of production.

The analysis of technological repertoires has been included in recent investigations of the context, scale and intensity of pottery production in Early and Middle Bronze Age Hungary. Michelaki (2006 and 2008) modified Costin's (1991) methodology to investigate the social dynamics of Maros pottery production. The study featured ceramics from the Early Bronze Age settlement of Kiszombor and the Middle Bronze Age settlement of Klarafalva, both situated in southeast Hungary. Analysis of the production sequence established that although both settlements participated in household production, variation in skill and standardisation occurred over time as well as between the two sites. Illustrating this, it was evident that for both settlements labour investment shifted from clay preparation in the early phases to vessel shape later on. Once again, exploration of homogeneity and differences in standardisation, skill and investment had been shown to insight into shifts and differences in social networks of craft production.

Budden (2007) also used analysis of technological repertoires to explore the social organisation of those making Middle Bronze Age ceramics at the tell site of Százhalombatta, settlement of Dunaújváros-Kosziderpadlás, and cemetery site of Dunaújváros-duna-dulö. Although there were similarities between this research and the aforementioned studies, Budden's approach was more focussed on variation of skill as a gateway to elucidating social networks of practice. This was based on Mauss' notions of *habitus*. Through examination of skill variability, she successfully situated the Bronze Age potters within social networks of learning. Lower levels of skill, signalled by error and therefore more variability, were noted in simple formations such as cups. On the other hand, less error and more standardisation, signalled by similarities, were noted in more technologically demanding vessels, such as large urns. Variation in this context therefore reflected an apprenticeship style system with tiered stages of learning practice (Budden 2007, 2008).

As demonstrated above, the examination of technology enables insight into the social dynamics of production. Vessel technology has been seen as an access point for investigating the social dynamics of production, and more specifically, communities of practice (Kohring 2011). According to Wenger (1998), a community of practice is a network of people who share a craft. Technological knowledge is shared amongst these makers through mechanisms of learning and social interaction. The concept of communities of practice therefore acknowledges that technological practice is socially situated and that a community of practice may therefore use similar methods of practice because the group of makers are guided by each other. Demonstrating archaeological application of these concepts, in a

study of variability within Bell Beaker assemblages, Kohring used local variation as a means to interpret how the Bell Beaker ideology was negotiated and established community by community (2011:151) showing that communities of practice can be delineated according to similarities in technological practice. Embedded within this approach is the acknowledgement of space as a contributing factor to differences between sets of object.

Individual Practice

The exploration of technological practice does not just allow us to look at variation at a community level. It also enables a closer look at how individuals were acting within these communities. Acknowledging this, Schiffer and Skibo's (1997) theoretical approach to ceramics aimed to explain design variability across space and time from the perspective of individual choices throughout the manufacturing process. Maker's technological behaviour was argued to be determined by an objects intended use. The knowledge and social context of the object's manufacture was also factored in.

Kohring (2011) stresses that social relationships are multi scalar. The Bell Beaker phenomenon is given as an example. The individual vessel as materialised action sits within several intersecting social networks. At a micro level, the vessel is made by an individual whose practice is determined both by themselves and also the structure of communal knowledge in which they practice (Bourdieu 1977). This takes place within a wider network of community practice. These two networks intersect through social encounters (Goffman 1963). Finally, at a macro scale, there is a wider social tradition in which individual and community endeavours take place. To sum up, the vessel is the materialisation of an individual working within the community of practice within a wider social potting tradition. Technological traces relating to gesture have the potential to inform of how individuals were learning their craft. This can be related to the wider potting community. Individuals are therefore the transmitters of community technological knowledge but may interact with it in different ways according to their ability. This in turn therefore may lead to and contribute to similarities and differences in material culture.

2.3.3 Creativity

Creativity is the process by which the new is created through the recombination and transformation of existing cultural practices or forms (Liep 2001:2). Within this thesis it is argued to be a useful lens through which variation within material culture can be explored. Creativity has been demonstrated to be a process bound up with novelty (Erez and Nouri 2010) and yet has featured very little in archaeological

studies of material variation. Although creativity is a complex topic of study, it is a process that has been argued to facilitate change and development in contemporary societies (Liep 2001). These developments have generally been associated with the creation of new products, with creativity providing the link between people, socio-technical change and the material results of these processes. Additionally, creativity rather than being divorced from tradition has been argued to be socially situated, (Sawyer 2006:113), using social rules as a platform a range of actions and behaviour. Creativity provides another viewpoint from which to think through variation and encourages a new perspective that is centred on exploring an explicit process that enables difference to occur. It therefore forms a pivotal point for discussing the engagement between people and materials. This is of relevance to archaeologists wishing to explore variation within material culture. Presented below is a discussion of the origins of the concept of creativity and its history of relationship with investigation of novelty and problem solving. Current research into the social context of creativity is also explored. Finally, suggestions regarding how the concept of creativity may be beneficial for, and used by, archaeologists are put forward.

Genesis of a Concept

Creativity it is a relatively modern concept that has manifested and developed over the last three centuries as a result of paradigmatic shifts. It was only in the early 1900s that the word *creativity* made its appearance in the English language (Runco and Albert 2010:27). Contemporary Western understanding of the concept is the birth child of two key ideological developments. The first of these was the elevated importance of the individual. The Age of Enlightenment in the 17th century in Europe gave way to a new sense of self; the individual became prioritised (Buss 1976) sparking off new trends in scientific exploration. It is this underlying notion that sowed the seeds for a definition of creativity as the individual inducing novelty.

The 19th and 20th centuries saw a second wave of ideological transformation that brought with it new ways of thinking through the mind and body, that had a particular focus on the role of cognition. Pioneers of this new research trajectory included Darwin, who initiated the consideration of problem solving, diversity and adaption (Dennett 1995 and Simonton 1999) and Galton (1869), who in the search for individual differences concluded that creative products can be directly attributed to a person's general ability. Another key figure in the genesis of research into creativity was Bethune who viewed the creative process as the ability to combine thoughts. He argued that the human brain stores information and reassembles it into novel configurations at a later date (Becker 1995). In response, James (1880) who is considered the forefather of modern psychology, developed the idea of

divergent thinking, a concept that is, as will be explained subsequently, still used in psychological investigations of creativity. Such trajectories in enquiry and applications of empirical testing not only paved the way for a modern definition of creativity but have also influenced the way in which creativity has since been explored; by the 1960s many researchers were testing for individual differences in the search for the creative individual.

Mirroring the Western understanding of the creative individual as the one who 'makes a break from socially imposed convention' (Ingold and Hallam 2007:6), a large proportion of research into creativity has probed individual cognition (Lubart and Sternberg 1998:62) and psychologists have spent much of the last 50 years producing theories of, and empirically testing, the individual 'creative mind' (Boden 1998). The current psychological definition of creativity, building on James (1880), is that it is the ability to produce a 'novel combination' of old ideas (Boden 2004). Such a definition however limits the discussion of creativity to the parameters of the mind. Therefore in the pursuit of psychological creativity, researchers have predominantly focussed on the following: novelty within the context of divergent thinking and novelty within the context of problem solving. Within other disciplines such as sociology, investigations of creativity have focussed on how creativity occurs within and impacts a society. Discussed below are three main facets of creativity that have had the most attention in the literature: novelty, problem solving and social creativity. These three facets of creativity also have the most promise in terms of application to the investigation of archaeological material.

Creativity and Novelty

Much of the research into creativity has been probed within psychological parameters. Although this lacks consideration of the role of the body and affordances of the material used in creative expression, it is fruitful to review this trajectory of thinking through creativity and novelty. This suggests that much of our understanding of what creativity is, and how it occurs, is bound up with an individual's mental processes. These investigations of creativity often use uniqueness and originality as indicators of creative thought and action. Initially, investigation of creativity was bound up with notions of intelligence. As an example, it was primarily concluded that creativity and intelligence were non-distinct after academic tests conducted on school children showed those with high scores of traditional intelligence also displayed high levels of creativity (Getzels and Jackson 1962). However these results were brought into question. It was argued that the experiment focussed too much on non-creative skills and consisted of closed questions which forced specific types of answers and stifled creativity (Wallach and Kogan 1965). As a result, a study was conducted which aimed to measure creativity

in school children in the form of divergent thinking (ibid). Rather than setting the investigation in a traditional academic examination format, the school children were placed in a social environment that aimed to cultivate creativity; they were told that there were no wrong answers, they could produce numerous lists of responses and above all, they were allowed to have fun. The answers given by the children were diverse and distinct from predictions based on traditional intelligence (Runco 2007:3) and so it was argued that creativity is a cognitive process that is distinct from traditional intelligence.

Exploration of creativity within the mind has been aided by a variety of psychometric tests, the earliest and most influential being Torrance Tests of Creative Thinking (Torrance 1974). This test measures creativity in specific tasks by scoring fluidity (the number of ideas), flexibility (the diversity of ideas) and originality (the rarity of ideas). These have predominantly been verbal. Participants are asked a question, and give a verbal response. Non-verbal tasks were also given. As an example, the *creative design task* involves presenting participants with circles and strips of coloured paper, a four page notebook, scissors and glue and giving them a thirty minute period of time to create a design (Torrance 1980). Such psychological studies of creative novelty had the aim of grading a participant's creative capacity and then separating them into groups based on their cognitive capabilities. Implicit within this approach is that the world can be divided into groups of creative and non-creative individuals.

Social science disciplines, however, acknowledge that novelty is context dependant. Therefore, what may be novel within one society may not necessarily be novel within another (Lubart 1999: 267). The discipline of sociology has been more concerned with creativity and its role in novelty within everyday tasks. Here the degree of novelty becomes relevant. An example given by Lubart is that novelty appears within language on a daily basis and that arguably each sentence uttered may be a novel combination of words. Yet for some researchers this would not be sufficient novelty (Lubart 1999: 267). He goes on to argue therefore that there are two ways of approaching creative novelty; to view it as the introduction of a radically new idea or to regard it as a process of on-going modification and adaption (ibid).

In a similar way anthropologists are concerned with the role that creativity plays within human engagement with the world (Appadurai 1996, Halland and Ingold 2007, Wagner 1981). As a signature of creativity, novelty is therefore considered in everyday contexts. Whereas psychologists limit their studies of creative novelty to the human mind and thus implicitly view creativity as an exclusively human faculty, anthropologists are beginning to challenge the human/ nature dichotomy, instead arguing that creativity goes beyond human agency. In particular, Ingold suggests

that creativity and the creation of novelty is not just a human ability but is a 'life process' that is bound up with interactions between humans and their environment (2000:339). This means that creativity can be viewed as an on-going process where novelty is always coming into being. As is discussed in more depth in section below, this has implications for how creative novelty within material culture can be approached; it may be signalled by profound novelty, as advocated by the psychological approach to creativity, or it may be signified by subtle change over time. Regardless, these two understandings of creativity overlap in terms of acknowledging that creativity is an outcome as well as a process.

Creativity as Problem Solving

Creativity has been argued as a special type of problem solving. Conversely, problem solving has been argued as a facet of creativity (Runco 1994:xi). Problem solving is a behaviour that results in a divergent or convergent behavioural outcome (Runco 2007). These outcomes usually result from a situation with a goal or obstacle. Problem-solving skills are therefore contingent with the capacity for creativity and creative problem-solving has thus been investigated through analysis of divergence in solutions to a common problem (Wakefield 1992).

It has been put forward by Guilford (1965) that many forms of problem solving require creativity, but not all creativity occurs due to the need for a solution. However, Runco (1994), a prominent figure in the study of creativity, has suggested that the key to understanding the relationship between creativity and problem solving is by defining the word *problem.* To illustrate this point he uses the example of the creative artist. On the surface it would appear that artists are not solving a problem as such, but are expressing themselves. Yet he argues that artists are trying to find the best way to express themselves or refine a technique, which implies that there is an underlying problem in the mind of the creator. Therefore, problems, the ability to find them, and the response to them are subjective.

Problem solving has been demonstrated to be affected by a person's knowledge of a given situation (Runco 1998). This knowledge can be discursive, a factual understanding of what needs to be done (Anderson 1982). It may also present itself as non-discursive embodied knowledge (Mauss 1934) that manifests as a result of repeated practice and engagement with a situation. Within the craft domain, both forms of knowledge are intrinsically linked to raw materials and tools, and thus problem solving is a means by which to use and manipulate materials and their affordances (Knappett 2004) to create solutions. Skill, as proficiency in a particular task, has also been demonstrated to play a role in creativity and problem solving (Runco 2007). Levels of skill are shaped by an individual's experience. Psychological

analysis has argued that more skilled individuals display higher levels of creativity than their less skilled counterparts indicating that high levels of skill can facilitate creativity (Pilgrim 1990). Yet skill has also been argued to conversely limit creative expression and supress original thought because habitual patterns of thinking can make it more difficult for original thought to emerge (Rubensen and Runco 1995). It seems therefore that although knowledge and skill are pillars of creative activity, the role that they play is dynamic and multifaceted. From this is can be put forward that evidence for problem solving in material culture is bound up with the technical task of manufacture and the skills of the manufacturer. As such, it is inextricably linked to maker, task and material.

Creativity and Society

Creativity is not just the engagement between individual and task, but is also tied up with socio-cultural interactions. The very definition and manifestation of contemporary creativity has been shown to be culturally dependant (Zhoun and Su 2010). It seems that social norms and shared expectations directly influence creative concepts and processes (Zou et al. 2009). As has already been noted, in many Western cultures, there is an individualistic norm meaning that individuals feel they must distinguish themselves from others (Morris and Leung 2010:317). Yet in other cultures, noticeably in the East, that tend to have a collectivist social norm where individuals work together to keep social harmony (ibid), creativity is expressed differently. Highlighting this, comparisons have been made between the creative performance of Israelis and Singaporeans working alone and also within peer groups (Erez and Nouri 2010). Participants were asked to interpret images. It was found that creative performance when working alone was similar across the groups but differed when working within a social group; Israelis produced unique and therefore more novel solutions, whereas Singaporeans also created unique solutions, but these were elaborations of existing solutions that were deemed as more useful (ibid.) Erez and Nouri (2010) concluded that both the social norms and the social milieu of activities influence creative outputs. Rather than stereotyping Westerners as abstract thinkers and Eastern societies as conformist, it has been suggested that social norms in Western societies tend to encourage more novelty, whereas in many Eastern cultures, usefulness is favoured (Moris and Leung 2010:324). Two conclusions can perhaps be drawn from this; that creativity can be completely novelty *or* the elaboration of standard practice, and that the concept of creativity is not the same for all cultures.

Sociologists and anthropologists acknowledge that creativity is the culmination of four things: the individual, the characteristics and knowledge of the individual including skill and talent, interaction between individuals, and the social and

technical environment in which creativity takes place. Consequently rather than being the sole product of the 'individual creator' (Liep 2001:2), creativity is argued as situated (Florida 2002; Kasof and Seitz 2003), occurring within the relationship between the individual and society (Fischer et al. 1998). Creativity in the modern Western world has been argued to have four main elements: originality, expression, social evaluation and social value. Originality is the conception of new ideas or application of existing ideas in new contexts (Fischer et al. 2005). Expression is the externalisation of these ideas out into the world through bodily performance (Hallam and Ingold 2007). Social evaluation then takes place. Finally, social appreciation and value is placed on creative activities (Boden 1998) and it has been found that social rewards and praises ultimately motivate further creative endeavours (Fischer et al. 1998).

It can be argued that not all of these four elements need to be present for creativity to occur, but that they are required for 'successful' creativity, where creativity is accepted by a society or community. It has been suggested that interplay between creativity at an individual and social level is reflexive because although individuals offer unique knowledge and skill, creativity as a result of these attributes is greatly enhanced by their socio-technical environment. This is demonstrated by the fish-scale model of creative collaboration (Campbell 1969), wherein there is always overlapping between individuals, and creative competence can never be embodied by a single person. Creativity is therefore a process that speaks of both individual endeavours and the social arena in which it takes place. Communities are integral to creative collaborations. Wenger (1998) and Fischer (2001) distinguish two types of communities: communities of practice, as has been previously discussed within section 2.3.2, and communities of interest. Communities of interest are a group of people who benefit from creative developments but may not actually be directly involved in the creative process. Both these types of community play a key role in creativity, and have been shown to both nurture (Rogers 1995) but in some cases also discourage creative expression (Florida 2002).

It has also been demonstrated that some contemporary cultures, particularly in the East, are less focussed on original products that their Western counterparts Instead, creativity is seen to be involved in the reworking of tradition and a form of meditation leading to self-discovery. It is therefore process-orientated as opposed to product-orientated (Chu 1970). This was demonstrated in a field study of traditional painters in India, where the 'creative' artists were deemed as those who contact 'the psychic reality within the depths of himself…to become one with it, integrating it through differentiation, meditation and self-realization' (Maduro 1976:135). The role of the creative individual within such societies is therefore to recreate what is already within her/him. It seems therefore that creative behaviour

can be shaped by social expectations and definitions. This consequently means that the material culture produced by these processes is bound up with social requirements. More recent sociological enquiry has focused on creativity as a process and how creativity in fact connects people together, through ideas and knowledge exchange (Gauntlett 2011). These approaches view creativity as practice-based, so that cognitive processes and the physical expression of making something are very much intertwined.

An Archaeological Understanding: Creativity made Material

The above summary of research into creativity attests to both its complexity and its importance. Implicit within the literature is the idea that creativity is a driving force of change which is subsequently reflected in material variation. For this reason, it is an appropriate and useful concept for the archaeologist. However, a key issue is that the aforementioned narratives and approaches to creativity seldom focus on the relationship between creativity and the material. Due to the fact that archaeologists work with the material, our understanding of creativity needs to tailored in order to become more relevant and therefore align with the way in which we work as a discipline.

Creativity has been studied in the archaeological record, albeit sporadically and also arguably to a limited depth. The conference proceedings *Creativity in Human Evolution and Prehistory* (Mithen 1998) demonstrate one such attempt. These papers acknowledge that creativity plays a fundamental role in the change of material culture. The authors willing to meet the challenge of creativity did so from a cognitive perspective (Hodder 1998, Mithen 1998 Renfrew 1998, Schulting 1998), influenced by Boden (1990) and her psychological assessment of what creativity is and how it works. Disappointingly the volume only just scratched the surface, and although it recognised creativity as a useful theoretical tool, the application of it was seriously under developed. Objects were merely described and interpreted speculatively (Malone and Stoddart 1998).

In the study of human origins, creativity has been a buzzword in recent years. This is highlighted in *The Origins of Human Creativity and Innovation* (2012) edited by Elias. In the context of lithic tools, creativity and innovation are treated as synonymous and creativity is studied within an evolutionary paradigm (Hovers 2012). This of course parallels research questions of the Palaeolithic and is driven by the desire to understand the evolution of the human brain. Creativity is thus implicitly seen as a stepping stone to modern human cognitive functions, and new technologies that occur in the Palaeolithic are labelled ‘creative’ to demonstrate developments in human cognition. Although the nature of the Palaeolithic record

may not lend itself to a study of creativity in any great detail, the discussions of creative processes are nonetheless reductionist, distilling what must have been dynamic and complex processes.

Although it seems that archaeologists are uncomfortable with the word creativity, innovation has been a much visited topic within the archaeological community, used as an explanatory concept for difference over time within the archaeological record. Torrence and van der Leeuw (1989) co-edited the volume *What's New? A Closer Look at the Process of Innovation* that shifted the spotlight onto cultural change through discussions of innovation. Innovation was seen to be a socio-cultural process and the volume was an attempt to go beyond notions of benefit and value as explanations of why change happened; their concern was with innovation as a process of technological change and adoption by a society.

The relationship between innovation and tradition has been brought into question (Papousek 1989, Sørensen 1989), yet the concept of innovation is in need of scrutiny. By treating innovation as readymade and focussing on the adoption of new techniques the underpinnings of how these innovations came to be in the first place are not considered. Another issue with the focus on innovation is that it tends to centre on change over time, neglecting differences in material culture that occur at the same time as each other. Subtle variations are over-looked in favour of locating temporal trends. Although this may seem like an obvious statement, creativity in archaeological investigation must be rooted in analysis of the material.

In recent decades attempts have been made within archaeological theory to deconstruct the relationship between people and matter. Materiality has become a buzzword for those seeking to understand the complex relationship between people and the objects they produce (Malafouris 2004). The probing of materiality has gone hand in hand with investigation into cognition (Renfrew 2004:23). On the back of this, archaeologists have become increasingly concerned with how this knowledge within an individual is transformed and where within the individual technical information resides (Knappett 2005). This goes beyond traditional approaches to cognition that negates the role of the body (e.g. Gardner 1985).

Clark (1998) stresses that cognition is embodied, situated and distributed. By this he means that cognitive knowledge is not solely stored in the brain but resides in the whole body, is situated in terms of perception and action (Knappett 2004), and is distributed 'beyond the individual' (Malafouris 2004:57). Malafouris has built upon these concepts and has further established three facets of cognition; enacted cognition, extended cognition and mediated cognition (2004:56-7). These considered elements propose cognition to be a way of engaging with the material

world and thus to study material culture is to study the mind of the individual. Mirroring this, and perhaps fittingly for this thesis' research agenda, Malafouris describes the workings of cognition 'at the potter's wheel' (2004:59). In his example, he discusses the role of knowledge, memory, perception, intentionality, and problem-solving in cognitive processes, and states that these reside in the maker's brain, their body muscles, the affordances or properties of their tools, the properties of the clay and temper and the prototypes of existing vessels. Cognition is therefore argued to be enacted *at* the potter's wheel. Within modern contexts, the study of creativity and cognition are inextricably tied. Thus if cognition is embodied, situated and distributed (Clark 1998), creativity, as a process that is bound up with the mind, will also take these channels. Recent developments in thinking through the relationship between cognition and material serves as an aid in thinking through the enactment of creativity and how it gives rise to material consequences. Creativity is therefore seen to be a both a material outcome and a process of creation.

Tim Ingold (2013) argues that human action is inherently creative and bound up with life processes. To illustrate this, he suggests that learning to make something within a tradition is a process of self-development, where the human involved in this process is constantly expanding their knowledge. Such a viewpoint immediately takes creativity away from being situated in the mind, but instead suggests that it is embedded within the connections between people and things.

It is clear that creativity has its place in archaeological narratives but in order to make it appropriate and relevant, an archaeological approach is required. This cannot incorporate everything that we know about creativity in the modern world but instead needs to be distilled to fit the requirements of the archaeologist. From this, exploration of creativity in the archaeological record can then flower. In light of recent theoretical developments within the discipline explored above, creativity can be seen as *the process of engagement between maker and material. It is the reassembly of existing socio-cultural technological knowledge that produces an object embodying uniqueness.* Exploration therefore needs to be twofold, centring on how the individual interacted with materials and also the social context and the networks of knowledge in which an object was fashioned. It is argued within this thesis that objects and practices provide an arena for creativity to take place.

In search of the individual in the material record, archaeologists have favoured the perspective of agency in order to examine the relationship between the agent and structure of which they are part of. Human agency is related to the broad understanding of the ways in which humans manipulate things. Within the literature, two modes of agency have been interrogated: primary agency, human

action that involves intentionality; and secondary agency, where objects act for humans, where the agency had been transferred to the object from a human in the first place (Gell 1992). An example of this would be a traffic light, which has been created by a human, but regulates human action. Hodder states that 'agency is simply the ever present force of things: the life force of humans, and all organic things, the forces of attraction, repulsion etc., of all material things and their interactions' (2012:215). By this definition, everything produces agency and is an agent. The concept of agency is therefore broad, and has directed archaeological enquiry in numerous ways, such as focussing on collective agency (Shanks and Tilley 1987), intentionality (Hodder 1998), and social struggle (Pauketat 1989). It is however, not an ideal concept for the research presented within this thesis. It is already implicitly acknowledged within this research that humans have an effect of materials and material culture, yet what this research is concerned with is interrogating the underpinning specific mechanisms that contribute to similarity and difference within material culture. The concept of agency is consequently too vague.

Furthermore, the concept of agency is loaded with assumptions (Dornan 2002), presupposing the abilities of the agent as well as the knowledge that the individual agent has of the wider structure of which it is a constituent part. Within this thesis, the concept of agency is purposefully abandoned due to its ambiguity. Instead, individual action has been explored through the lenses of tradition, practice and creativity in order to encourage specificity in the articulation of a regional phenomenon and the diversity within it. Creativity in particular is a pinning down of one facet of agency, and is far more useful in dissecting how diversity materialises, rather than simply stating that it was human agency.

2.4 Summary

Understanding the relationship between similarity and difference is an archaeological requirement as old as the discipline itself. Traditional approaches such as typology and culture-history represent past attempts to deal with, and explain why, artefacts vary but working within such paradigms do not allow for the full spectrum of variation of material culture to be taken into account, nor has it served to produce socially orientated narratives of the material. In response, more recent research has examined technology and the transmission of knowledge within craft settings as a means of dealing with similarity and difference. This has opened up interpretative scope by bringing focus onto people and the role they play in variation through the eyes of craft practice and tradition. Despite this, the role of creativity as a means for exploring certain types of variation has been on the whole cautiously ignored. However, in contemporary psychological and sociological

research, creativity is argued to be an important mechanism that generates divergence in products and socio-cultural change.

This thesis is an attempt to remedy this and is therefore a multi scale approach to exploration of the Belegiš. It adds the investigation of creativity to the familiar concepts of practice and tradition. Using the analysis of technological repertoires, the underpinnings of similarity and difference can be exposed from the bottom up and the interplay between the two can be explored.

Chapter 3
Back to the Bronze Age
Current Interpretations of the Belegiš Phenomenon

3.1 Introduction

The tension between material similarity and difference has been a source of frustration and confusion for those attempting to deal with the Bronze Age in the region of Vojvodina in Serbia, in particular Middle and Late Bronze Age Belegiš cremation urns. Found primarily in cemetery contexts, this ceramic phenomenon comprises a recognisably unified corpus of vessels that also display noticeable variation. Mirroring attitudes to other forms of prehistoric material culture within this area, in attempts to understand Belegiš complexity, culture-historical approaches have been implemented and vessels have been categorised according to criteria relating to form and decoration. A main feature of this mode of investigation and interpretation is the formation of typologies alongside the implicit culture-historical assumption that differences in material culture directly equate to ethnic disparity. This has meant that much of the focus has been on distinguishing so-called cultural borders. This approach has not however lent itself to satisfactory or sufficient insight into how and why these vessels demonstrate variability, nor does it shed light on the people who made the vessels. These traditional culture-historical approaches were simply an attempt to probe the question of similarity and difference within the parameters of a single ceramic phenomenon. Due to the simultaneous conformity and variation within the Belegiš phenomenon that has been noted by previous authors (Tasić 2002, Todorović 1977, Vršac 2002), it stands as an ideal case study to explore tradition, practice and creativity within manufacture.

This chapter provides a background to the Belegiš of the Middle and Late Bronze Age in the Serbian Danube basin of Vojvodina and situates it within a broader understanding of Middle and Late Bronze Age chronology and the current interpretation of social dynamics in and around Vojvodina. It discusses current narratives of the Belegiš ceramic legacy and highlights the issues and implications of traditional approaches to understanding similarity and difference within Bronze Age material culture from this area.

3.2 Bronze Age Communities in Vojvodina

The Bronze Age in Europe is perhaps one of the turning points of prehistory where craft blossomed to create noticeable complexity in material culture. It was a period that displays dynamic material variation in the archaeological record. Beginning at around 2200BC in central Europe and the Balkans (Kristiansen 1998:32), the Bronze Age is primarily marked by the advent and dramatic increase in the use of bronze. Coinciding with this, it has been argued that more complex social stratification emerged aided by the exploitation, control and trade of copper and gold in the Carpathian region (Vandkilde 2007:91), and tin further east (Kristiansen and Larsson 2005; Pernicka 1998; Weeks 1999). The region of Vojvodina sits on the periphery of this activity.

Vojvodina is located in modern Serbia. Its three constituent parts are Srem, Bačka and Banat (figure 3.1). Traditionally, Vojvodina has been seen as the contact zone between the Aegean and central Europe and it has been argued that Bronze Age communities in this region were exposed to influences from the Carpathian basin (Mozsolics 1967) and the Balkans. The genesis of Bronze Age communities in Vojvodina appears complicated and has been linked to the emergence of elite groups, primarily in territories to the north, that were engaged in networks of long-distance trade (Kristiansen and Larsson 2005). The river network consisting of the Danube, Tisza and Sava played a key role in the transmission of resources, material culture and ideas between communities and numerous Bronze Age sites are located along these river systems. These networks therefore allowed for interconnectivity between communities. The implications of this are that resources and ideas could be transported from one settlement to another and therefore Vojvodina was situated within a larger Bronze Age network.



Figure 3.1 Map of regions of Bačka, Srem and Banat in Vojvodina

3.2.1 Situating the Belegiš: Chronology and Regional Groupings in Vojvodina

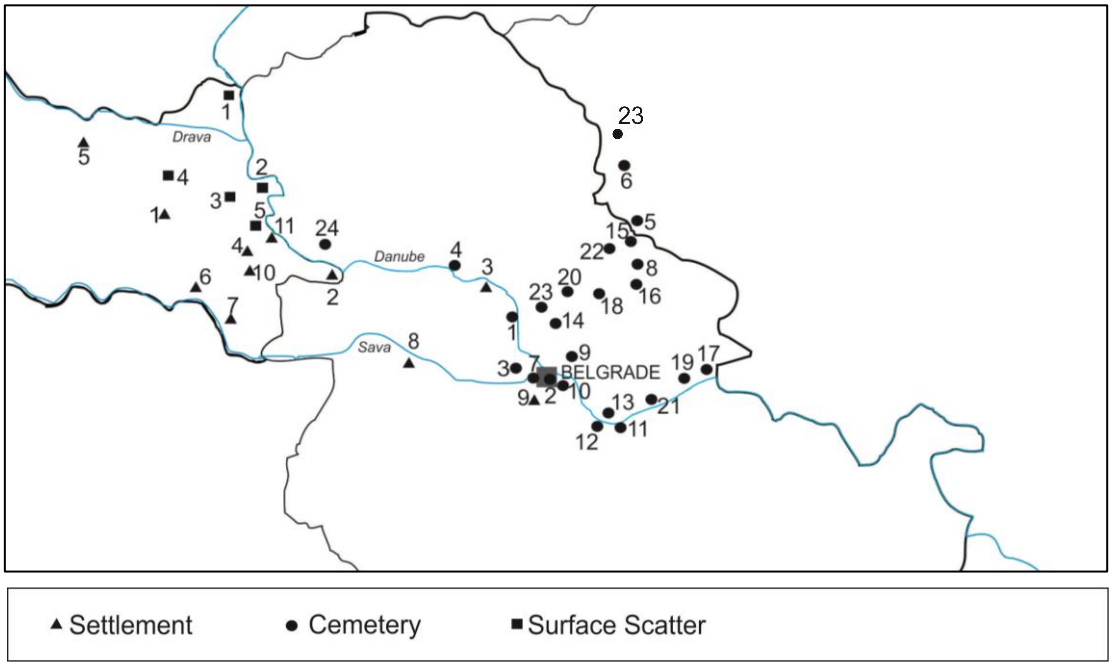
The Belegiš has long been synonymous with Middle and Late Bronze Age Vojvodina. As a recognisable ceramic phenomenon due to specific shape and decoration characteristics, its core is situated in the Serbian Danube basin in Srem, but it is also found in southern Bačka, Banat and as well as parts of eastern Croatia and western Romania. Archaeological literature has referred to Belegiš by many names: Vatin-Belegiš (Majnarić-Pandžic 1984), Belegiš-Ilandža (Garašanin 1983:699), Belegiš-Bobda (Foltiny 1985), Belegiš-Cruceni (Morintz 1978) and Pecska-Belegiš (Kemencei 1982). This is primarily reflective of modern geographical borders, a focus on individual sites and the differences in language and terminology (Bankoff 2004). Yet it simultaneously highlights the complexity of this phenomenon; all of these names essentially refer to the same material that appears to display local differences (Fohenbaher 1989). Current comprehension of the Bronze Age in this region therefore consists of a patchwork of disjointed and sometimes contradictory chronological and culture-historical narratives that often refer to the same material by different names (Bankoff 2004:1).

To situate the Belegiš in its spatial and temporal context it is fruitful to discuss Bronze Age chronology and regional groupings in and around the Serbian Danube area. As yet there are only a handful of absolute dates for the Bronze Age in Vojvodina. Many of the chronologies devised are relative chronologies that are sporadically supplemented with radiocarbon dates when possible. The chronological sequences currently used in Serbian and Croatian archaeology are frequently based on schemes developed by Hänsel (1968). These incorporate the Reinecke sequence of southern Germany. This originally split the Bronze Age into four divisions, Reinecke A-D, and the Iron Age also into four divisions, Hallstatt A-D (Harding 2000:10). Subsequent revisions have resulted in agreed overlap between the Late Bronze Age and Early Iron Age in this region and now periods Ha A and Ha B are considered Late Bronze Age. Table 3.1 displays the chronological sequence in Vojvodina. It is complemented with more detailed discussions below that take stock of current cultural classifications and chronologies. The beginning of the Belegiš I phenomenon dates to 1400 BC and corresponds to Reinecke's Br C phase (Tasić 2002). It ends in around 1100 BC (end of Br D). The overall chronology of Belegiš is based on two phases, I and II, each divided into three further sub-phases. Its last appearance at around 900BC, or Ha A2.

Cultural Unit	Early Bronze Age		Middle Bronze Age		Late Bronze Age	
	Br A	Br B	Br C	Br D	Ha A	Ha B
	2500BC	1600BC		1200BC		700BC
Vinkovci	----------					
Vatin	-------- ----------					
Verbiciaora	----------					
Hügelgräber	----------					
Belegiš I	----------					
Dubovac-Žuto Brdo	----------					
Szeremle	----------					
Belegiš II				----------		
Gava				----------		
Urnfield (Virovitica and Barice- Gređani)				----------		

Table 3.1. Chronology of Bronze Age Groups in Vojvodina (based on Forenbaher 1993 and Tasić 2004).

Over 40 Belegiš sites are known. Figure 3.2 presents their distribution. The divide in distribution between settlements and cemeteries that the map alludes to is most likely not reflective of the archaeology but of differences in national archaeological traditions; in Croatia Belegiš sites tend to have been found during short rescue excavations with the sites being subsequently labelled as settlements, whereas in Serbia, discovered cemeteries were more intensively investigated.



	Cemetery Sites		Settlement Sites
1	Stojica Gumno	1	Josipovac-Punitovacki-Veliki Polje
2	Karaburma	2	Livadice nr. Dalj
3	Surčin	3	Feudvar nr. Mosorin
4	Stubarlija	4	Vinkovci
5	Cruceni	5	Gradina (Privlaka)
6	Bobda	6	Dubovo nr. Zupanja
7	Kaluđerske livade	7	Ciglana in Gunja
8	Ilandža	8	Gomolava
9	Vojlovica (nr Pancevo)	9	Ekonomija Sava – Jakovo
10	Rospi Cuprija	10	Privlaka
11	Orešac	11	Jabuka
12	Ritopek	12	Opovo
13	Ivanovo-Dvorište	13	Beli Breg – Pančevo
14	Margita-Obrovac	14	Batka-Perlez
15	Vatin		
16	Vršac – Stari Ludos		
17	Banatska Palanka		
18	Banatski Karlovac		**Surface Scatters**
19	Dubovac	1	Batina
20	Kovačica	2	Aljmaš (Erdut)
21	Kovin	3	Klisa
22	Sotin	4	Osijek
23	Tolvadia	5	Trpinja

Figure 3.2. Map of Known Belegiš Sites

The majority of well documented Belegiš sites are cemeteries, with the number of excavated settlements being smaller in comparison. The better excavated settlement sites include: Ekonomija Sava in Jakovo, Jabuka, Opovo, Beli Breg-Pančevo, Batka-Perlez and Farkažin-Selište. These are all one-layer sites that only have material of Belegiš type. Gomolava is the best excavated settlement, in comparison offering a multi-layer stratigraphic sequence that is argued to support

the six-phase Belegiš development (Tasić 2004). The ceramic material unveiled from this site comprises primarily small cups of Belegiš type, and broken sherds from larger storage vessels (Figure 3.3), which were scattered throughout the site. Only one house was uncovered and excavated. This supposed domestic dwelling consisted of the remnants of clay walls, a compacted clay floor roughly 4 x 3.8 metres in size, with scatters of ceramic sherds on the surface. There were no signs of postholes, and no clear stratigraphy within the confines of the structure itself (Koledin Pers. Comm.).

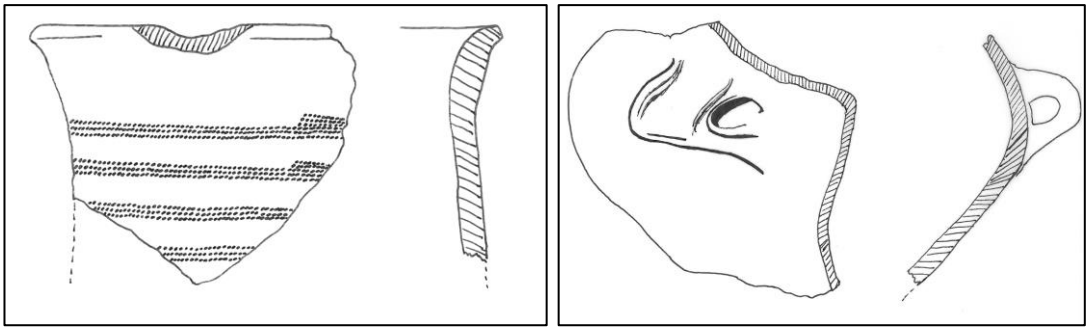


Figure 3.3. Examples of ceramic remains found at Gomolava (Koledin 2007: Report on Gomolava: Museum of Vojvodina, Novi Sad)

Established chronologies for Belegiš I have been largely based on cemetery data with the exception of a small number of settlements that offer clear stratigraphy such as Gomolava and Ekonomija Sava. These cemetery chronologies have since been supplemented and verified with sporadic radiocarbon such as those from the recently excavated settlement of Josipovac-Punitovački polje in eastern Slavonia. The absolute dates from charcoal have dated the site from 1520-1400 to 1500-1380, and suggest that Belegiš I may have spanned the entirety of the 15th century BC in Slavonia (Krmpotić 2009). This is therefore earlier than the date of 1400BC given for Srem (Tasić 2002). Table 3.2 demonstrates current understanding of Middle Bronze Age Chronology. According to this sequence, Belegiš Ic vessels are classed as Late Bronze Age.

Reinecke Sequence		Serbian Danubian Sequence
Middle Bronze Age		
1600BC	Br B2	Late Vatin
1400BC	Br C	Belegiš Ia Belegiš Ib
Late Bronze Age		
1300BC	BrD	Belegiš Ic

Table 3.2. Middle Bronze Age Chronology in the Serbian Danube Area (based on Petrović 2006:191)

Many of the known Belegiš sites with the exception of those previously discussed are not well investigated and based upon chance finds, such as pottery that loosely corresponds to Belegiš typology. We know very little about the lives of Bronze Age people in Vojvodina. Even today, with additional settlement investigations such as that of Josipovac-Punitovački polje, Croatia in 2007 and 2008 (Krmpotić 2009), the number of well excavated Belegiš settlement sites is limited.

Early Bronze Age: Vatin (Br A1 – Br B2)

Many approaches to understanding the Belegiš phenomenon are rooted in trying to explain its origins and how it developed. It has long been put forward by researchers in Vojvodina that Belegiš has roots in the Vatin of the Early Bronze Age (Uzelac 1996). Vatin is seen to be a widespread phenomenon that encompassed eastern Srem and western Bačka (Figure 3.4), reaching its apex at the beginning of the Middle Bronze Age (Uzelac 1996). It expanded into areas between the Sava and the Danube as far down south as the Morava valley (Tasić 2004). Vatin is characterised by the appearance of specific shapes of pottery vessels which have been interpreted as indicating an independence from Bronze Age phenomena further north (Tasić 2006). The metal finds uncovered on Vatin sites display northern Koszider style decoration. This led to the initial conclusion that all metalwork was imported from the Carpathian region (Majnarić-Pandžić 2004). Yet more recent excavations at the site of Tržnica in eastern Slavonia seem to contest this. An abundance of clay moulds and metal objects were uncovered suggestive of intense metal working on this site during the early Middle Bronze Age (Krmpotić 2009).

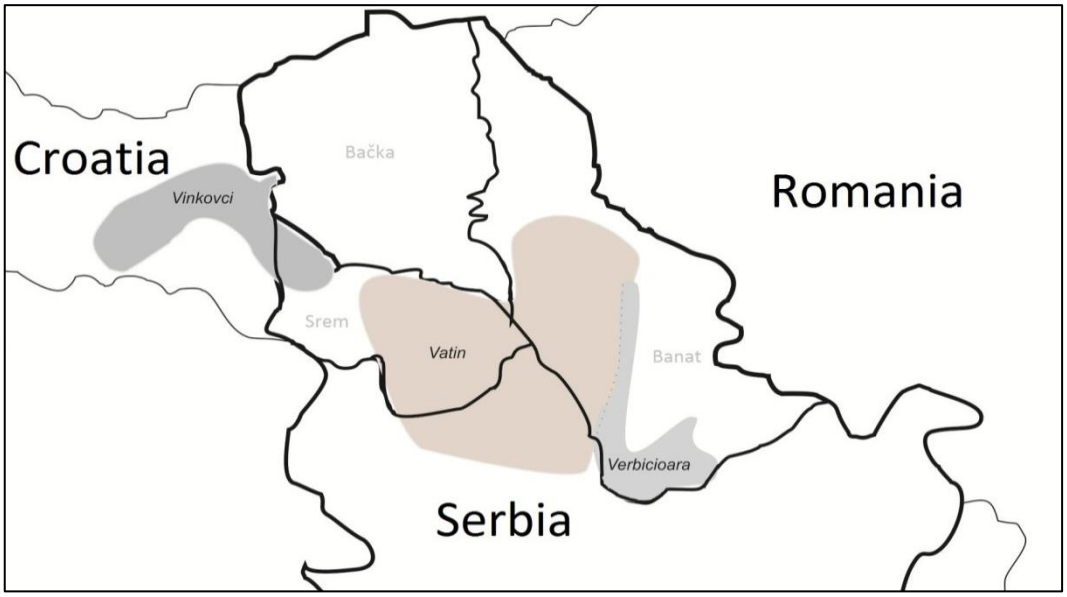


Figure 3.4. Distribution of Early Bronze Age in Vojvodina (based on Bona 1992, Uzelac 1996 and Vasić 2006)

The Vatin group was named after a site near Vršac in Serbia. Although there have been many sites found with material of Vatin type, the most important sites are

Pančevo-Najeva ciglana, Omoljica-Zlatica and Orešac-Židovar in Banat (Uzelac 1996:24), Belegiš, Gomolava and Gradina in Srem and Vinča, Ljuljaci and Dobrača in the remaining areas of Serbia (Vasić 2006). Garašanin (1973; 1983) originally dated Vatin to the Early to Late Bronze Age, but this was revised by Tasić (1983; 1984) who placed it into the Early Bronze Age with slight overlap into the Middle Bronze Age. He argued that there were three phases of Vatin culture; Vatin-Omoljica and Vatin-Vršac which can be dated to the Early Bronze Age, and Vatin-Belegiš which was a continuation from Vatin to Belegiš in the beginning of the Middle Bronze Age. Uzelac (1996) synthesises the three key developments of Vatin pottery: proto-Vatin, Vatin I and fully developed Vatin (II), but keeps the final stage of Vatin distinct from Belegiš (Table 3.3). In this scheme the proto-Vatin phase dates to Br A1. Ceramic vessels from this phase are generally low-bellied beakers with two large handles, sometimes of *ansa lunata* type. They are often without decoration (Uzelac 1996). The Vatin I phase, also known as Vatin-Omoljica, dates to Br A2. The predominant vessel type for this phase is the biconical urn with *ansa lunata* style handles. These are usually grey or brown in colour and either have no decoration or horizontal fluting on the belly. The most developed Vatin phase is Vatin II, dating to Br B1. The predominant ceramic types from this phase are well burnished biconical urns that are decorated with spirals, incised lines, triangles and fluting (Uzelac 1996).

Br A1	Proto-Vatin	Dark grey/ brown burnished vessels. Fine fabrics. Low bellied vessels two handles and sometimes two spouts.
Br A2	Vatin I (Pančevo-Omijlica)	Brown/ dark grey/ black burnished vessels with horizontal fluting on belly. Biconical urns with ansa lunata type handles.
Br B1	Vatin II	Complex shapes. Dark grey/ black well-burnished vessels decorated with spirals, incised lines and bands, triangles and fluting.

Table 3.3. Phases of Vatin Ceramics (based on the synthesis by Uzelac 1996)

Hänsel and Medović (1990) have disputed Tasić's initial three stage scheme by arguing that Vatin-Omoljica is not a chronological phase but a style of pottery that appears at the same time as later Vatin material. Stojić (1998) susequently grouped Vatin into six chronological phases; Proto-Vatin I-II and Vatin I-IV. These divisions were based on material from Lanište, Ostrikovac, Ostra and Dobrača but the material was so complex that even Stojić himself suggested that his groupings were not conclusive.

Contemporary with the Vatin of the Early Bronze age is ceramic material of Vinkovci and Verbicioara type. These are both fine brown and grey ceramic vessels densely decorated with incised curvilinear lines, hatched rhombuses, triangles and zigzags (Figure 3.5). Despite decoration that is distinct from Vatin, Verbicioara vessels display similar ceramic forms to the Vatin. Due to their decoration they have not been included in Vatin typologies yet appear almost exclusively on Vatin sites, particularly to the east of Vatin distribution. The culture historical narrative explains this simply as an influx of a separate culture (Uzelac 1996:27).

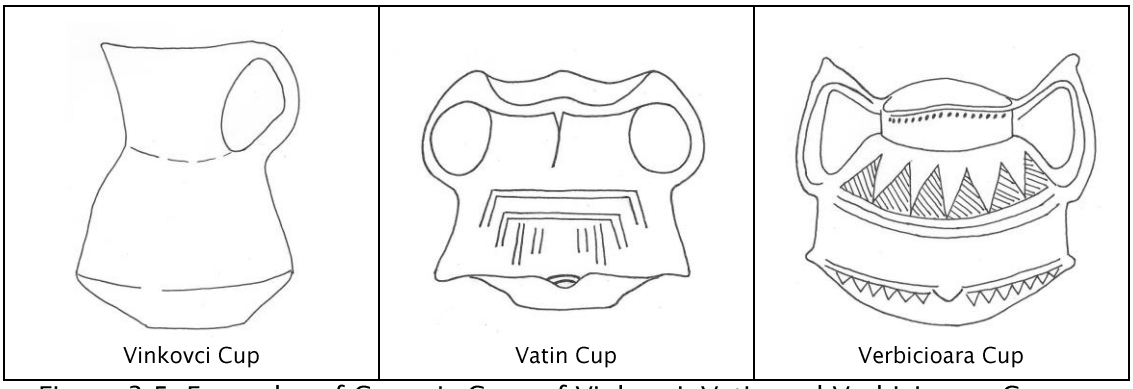


Figure 3.5. Examples of Ceramic Cups of Vinkovci, Vatin and Verbiciaoara Groups (*not to scale*)

Middle Bronze Age: Belegiš I (Br C-Br D)

Ceramics of Vatin type appear on numerous sites in Srem, Bačka and Banat that have ceramics of Belegiš I type, for example the sites of Belegiš, Gomolava and Pančevo. The pottery belonging to Vatin and Belegiš I types are characteristically similar, particularly in decoration. For these reasons it has been argued that there was continuity between Vatin and Belegiš I in Srem, with different areas of Vatin developing into other groups at different times in other regions (Vasić 2006). Encrusted ceramics have also been found at the sites of Vatin, Vinca and Gradina (Vasić 2006:231). The general consensus is that these decorative methods originated from Transdanubia from groups such as the Encrusted Pottery group of Hungary (Vasić 2006). It is thought that fusion of northern Pannonian ceramic traits alongside Vatin decoration reflects and resulted in the formation of the Middle Bronze Age Szeremle group in Banat (Br A2-B1). These shifts in ceramic preference have been attributed to a series of large-scale invasions and migration. Tasić's (2004) explanation is that the Vatin attempted to gain control of a large territory, expanding westward and southward in the early part of the Early Bronze Age. They were then 'driven out by the Encrusted Pottery people that descended from central and western Pannonian plain' (2004:23) and remained in Banat where the cultural group went through several further developments, one of these being the Belegiš of the Middle Bronze Age, which went on to encompass the majority of Srem, parts of Banat and eastern Slavonia in Croatia (Figure 3.6).

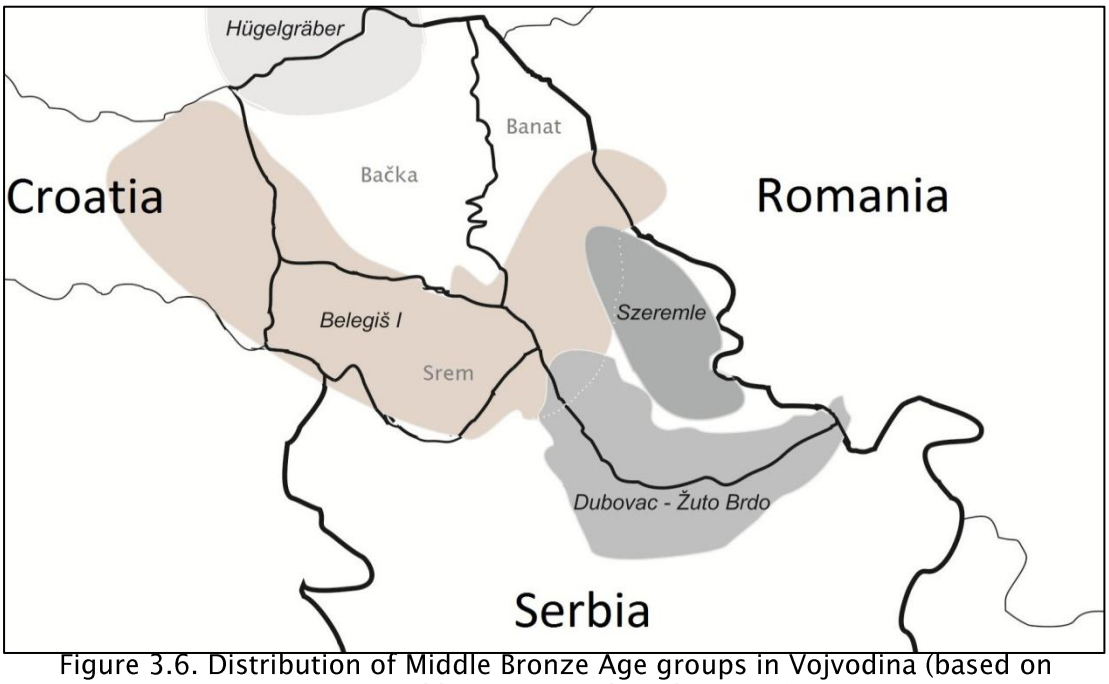


Figure 3.6. Distribution of Middle Bronze Age groups in Vojvodina (based on Szentmiklosi 2006 and Uzelac 1996)

Attempts have been made to detail more closely the regional developments of Vatin. A more explicit explanation for the genesis of Belegiš in Srem and Banat is that Vatin came into contact with pottery of Litzen type from central Europe, which is characterised by cord impressions (Uzelac 1996). Szeremle and Dubovac – Žuto Brdo have been classed as separate cultural units; the latter ceramic type displays decoration in the form of encrusted stamps and zigzags. Belegiš I cups are characterised according to rim shape and incised decoration (Figure 3.7). Despite attempts to explain the regional variation in material culture, particularly the ceramics, accounts are still confusing and contradictory. Such interpretations are entirely based upon the assumption that material style directly responds to cultural ethnicity and that changes in material culture signify the displacement of cultural groups.

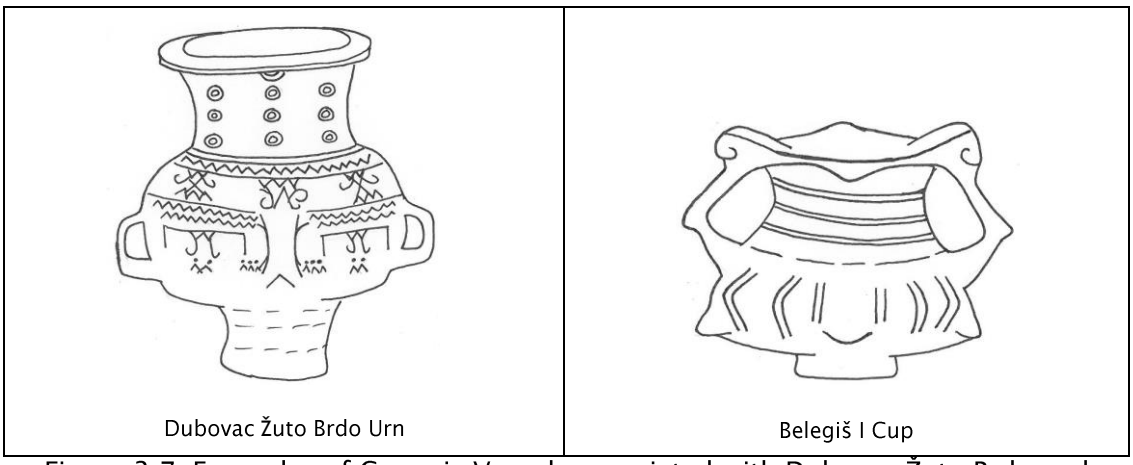


Figure 3.7. Examples of Ceramic Vessels associated with Dubovac Žuto Brdo and Belegiš I (*not to scale*)

Despite the confusion concerning Belegiš development, its distribution is agreed upon and well defined, lying south of the Sava, spreading westward into Croatia and eastward into Romania. It therefore stands out as an entity it its own right. Belegiš I urns are characterised as biconical vessels with cylindrical necks and four handles usually protruding from the widest part of the belly (Figure 3.8). Based on ceramic and metal finds from Belegiš and Karaburma in Srem and Vojlovica in Banat, Belegiš I ceramic material has been subdivided into groups Belegiš Ia to Ic (Tasić 2002:193). According to Tasić (2005), Belegiš Ia is characterised by simple combed decoration, Ib is by the presence of combed or cord-impressed decorative motifs, and Ic is identified by the appearance of thin facetted decoration on the neck and/or belly. Each sub phase shares shape characteristics. It seems therefore that archaeologists have constructed a classification of Belegiš I through consideration of the interplay between vessel shape and decoration. However some vessels are without decoration and decoration seems to vary from site to site.

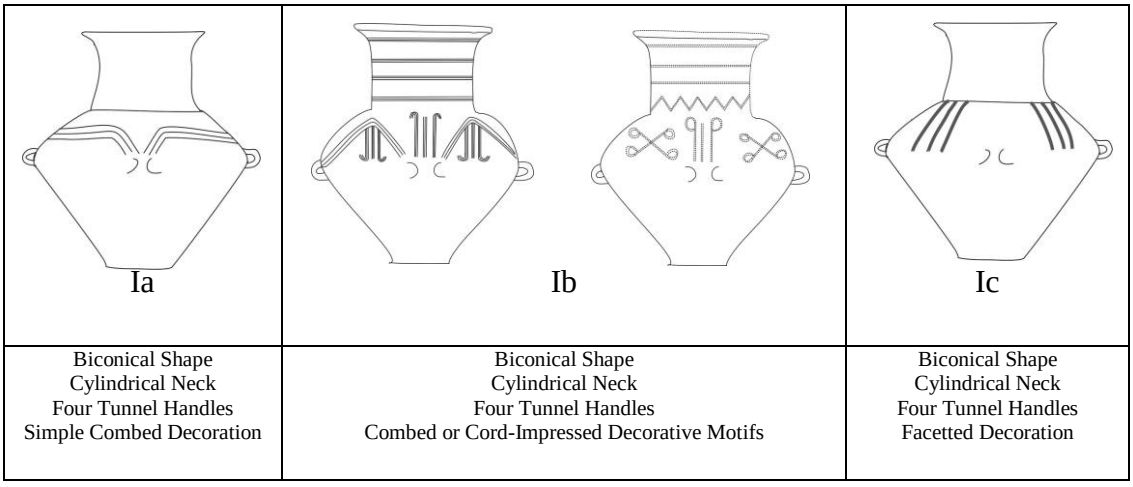


Figure 3.8. Typological Criteria of Belegiš I (*not to scale*) (after Tasić 2005)

Late Bronze Age: Belegiš II (Ha A1)

Belegiš II vessels are defined by the presence of fluted decoration and the addition of lugs. The division between Belegiš I and II is based on the analysis of material from the settlement site of Gomolava which, according to Tasić (2005), has two clear separate Belegiš horizons. Despite the grouping of these two groups, there appears to have been a gradual progression of change between Belegiš I and II vessel types, with much overlap between the two, hence the reason both groups are still placed under the umbrella term of Belegiš.

Belegiš I and II cremation practices appear similar, as suggested by continuous use of the same cemeteries. This suggests that there was continuity in social mortuary practices. That said, not every site has yielded ceramics of both Belegiš I and II type. The western border of the Belegiš I distribution does not match that of Belegiš II; in the later phase it shifts further east whilst the eastern border moves further into Banat and even into parts of western Romania (Figure 3.9). The Belegiš II phenomenon is situated on the periphery of the Urnfield culture. The Virovitica and the Barice-Gređani are two variants of the early Urnfield, each developing along rivers and said to contact with one another in areas such as the Požega Plain (Dizdar et. al 2011: 153). The natural barrier between the Sava and the Vinkovci plateau may account differences in material culture between Virovitica, the Barice-Gređani; and Belegiš II; where these three meet there is a basin of marshes and forests (Dizdar et. al. 2011: 31). The Gava phenomenon which is also marked by cremation cemeteries, borders Belegiš II, encompassing parts of modern Hungary (south of the Maros River) and western Romania.

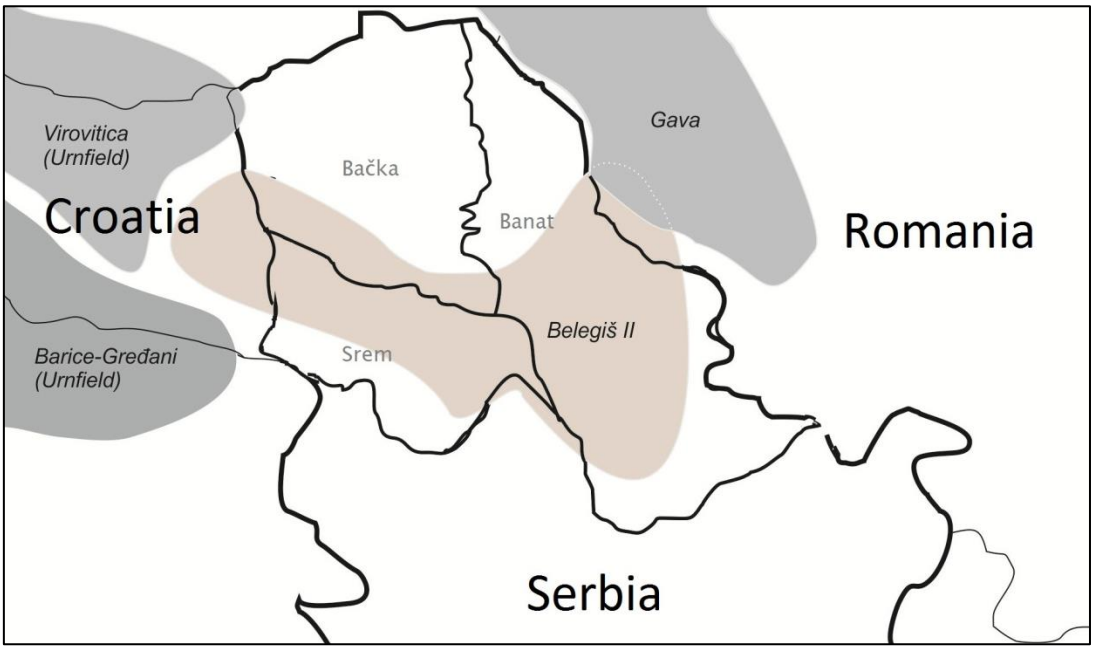


Figure 3.9. Distribution of Late Bronze Age groups (based on Forenbaher 1989, Dizdar et. al 2011, and Tasić 2004)

Distinctions between these groups have not been based on settlement differences but on ceramics and burial of the dead. There is clear contrast in depositional practices between the Virovitica and the Barice-Gređani. The Virovitica placed cremated remains in an urn often covered with a bowl, whereas the Barice-Gređani placed the remains at the bottom of a pit and then covered them with a bowl (Didzar et. al. 2011: 18-19). Both the Virovitica and the Barice-Gređani are characterised by material culture that is somewhat distinct from Belegiš II as much as their urns are squat and bulbous with shallow fluted decoration. Virovitica urns are characterised by having two small belly handles. Barice-Gređani urns display no handles. The Gava complex is distinguished primarily by ceramics, black burnished urns decorated with fluting that are usually found in funerary contexts (Forenbaher 1989:23). These three groups therefore mirror a wider trend for fluted ceramics in the Late Bronze Age (Figure 3.10).

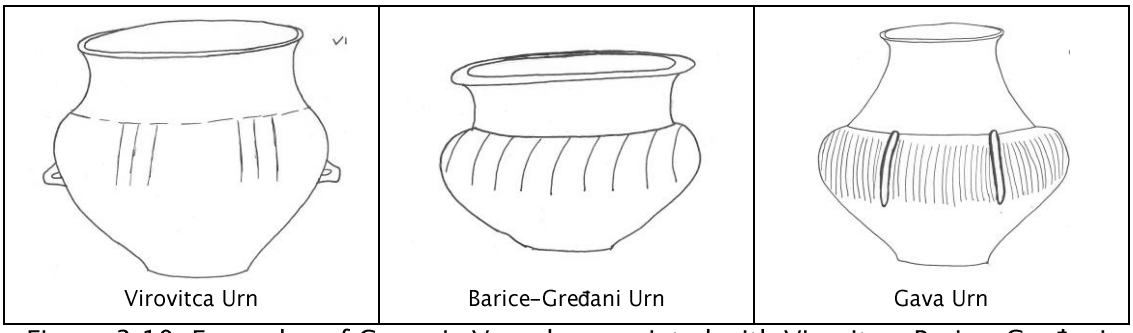


Figure 3.10. Examples of Ceramic Vessels associated with Virovitca, Barice-Gređani and Gava

Belegiš II has been subdivided into Belegiš IIa, IIb and IIc (Figure 3.11). Belegiš IIa vessels are categorised by biconical shapes, cylindrical necks, four handles, small

decorative bosses on the shoulder and the appearance of faceted decoration, giving the appearance of wide deep incisions. Belegiš IIb are characterised by biconical shapes, wider and more tapered necks, four handles, exaggerated bosses and the appearance of faceting and fluting decoration; fluting decoration displays wider and more shallow grooves than faceting. Belegiš IIc is defined by fully tapered necks, the addition of four lugs and fluted decoration (Tasić 2005).

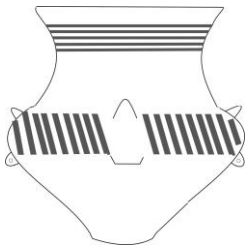
 IIa	 IIb	  IIc
Biconical Shape Tapered Neck Four Pinched Handles Small Applied Bosses Facetted Decoration	Biconical Shape Tapered Neck Four Pinched Handles Medium Applied Bosses Facetted/ Fluted Decoration	Biconical Shape Fully Tapered Neck Four Pinched Handles/ Lugs Large Applied Bosses Fluted Decoration

Figure 3.11. Typological Criteria of Belegiš II Vessels (after Tasić 2005).

Again the dating for Belegiš II is relative and based on few absolute dates. Table 3.4 shows that the beginning of Belegiš II has been dated to 1100BC and ends in 900BC, according to some, marked by the infiltration of Gava material (Petrović 2006).

Reinecke Sequence		**Serbian Danubian Sequence**
Late Bronze Age		
1300BC	BrD	Belegiš Ic
1100BC	Ha A1 Ha A2	Belegiš IIa Belegiš IIc
900BC	Ha B	Gava

Table 3.4. Middle Bronze Age Chronology in the Serbian Danube Area (based on Petrović 2006:191)

It is clear that there is overlap in Belegiš I and II typologies. The differences between Ic and IIa are minimal and often ambiguous; both are groups of biconical urn that display facetted decoration. It is easier to distinguish between Belegiš Ia and Belegiš IIc; the differences in decoration from cord and incised to fluting, and the shape from cylindrical necks to fully tapered neck shapes is more pronounced. The distinction between Belegiš I and II however signals an attempt to get to grips with

similarity and difference within Belegiš assemblages. The fact that the constructed typologies are open to interpretation highlights the complexity of the material. The same is true for distinctions between Belegiš II and Gava; both are characterised by similar shapes and decoration and sometimes in the literature Belegiš II is called Gava (Bukvić 2000) This once again highlights the complex nature of Bronze Age ceramic material culture within this area and the traditional archaeological attempts to counteract this through typological sequencing.

It is evident that research into the spatial and temporal trends of similarity and difference in prehistoric material culture of Vojvodina and neighbouring areas is still predominantly culture-historical in outlook. These approaches originated with Childe and Kossinna who aimed to explain changes in material culture over time through shifts in cultural traditions. Based on the assumption that spatial and chronological variants represent distinct cultural entities and group traditions, archaeologists working within this vein began producing distribution maps of cultural units for each phase of prehistory. Within this paradigm, major differences in material culture were explained by migration of ethnic groups and lesser changes by diffusion (Shennan 2001:811). British processual archaeology of the 1970s rejected these assumptions and instead linked changes in material culture to human adaption. During the 1980s postprocessualists relinquished both culture-historical and processual narratives. Accompanying this rejection was the assertion that objects are multidimensional and are imbued with and also structure social meaning (Hodder 1982)

3.3. Belegiš Sites

This thesis focusses on Belegiš urns from cemetery nine sites. Five of these, the sites of Belegiš - Stojića Gumno, Ilandža, Kaluđerske Livade, Karaburma, and Stubarlija, were well excavated and have subsequently been published. The unpublished sites of Surčin, Tolvadia Vatin, and Vršac-Stari Ludoš are also included in this thesis. Urns from these sites consist primarily of chance finds that are without accompanying contextual data. Despite this they provide an untapped and rich resource of well-preserved vessels. The sample for this thesis is therefore not representative of all Belegiš urns, yet the sites have been carefully chosen in order to explore specific geographical trends in order to assess. This is explained in more detail throughout this section. The sites are discussed in the chronological order in which they were discovered.

3.3.1 Surčin

The first cemetery material that was attributed to the Belegiš group was uncovered by Brunšmid at the site of Surčin west of Belgrade, in the first half of the 19th century. Ceramic urns and cups were recovered from the site in the late 19th century by antiquarians (Figure 3.12). Typical of such investigations, the artefacts were not recorded in the methodical manner employed by today's archaeologists and therefore the assemblage is without accompanying contextual information. This means that the internal chronology of the site can only be based on typological analysis. Since the subsequent investigation and publication of neighbouring Bronze Age cemeteries which unearthed characteristically similar vessels, the ceramic urns from Surčin have been assigned to Belegiš. Alongside these urns were small elaborate cups that also correspond to the Belegiš sequence. The material from Surčin, held in the Archaeological Museum of Zagreb, was analysed by Vinski-Gasparini (1973) as part of a larger investigation into the Urnfield Culture in Pannonia. As was usual at the time, these investigations predominantly involved describing the material and linking it to neighbouring cultural groups. Thus their manufacture and Belegiš ceramic technology has not been examined. This site was chosen in order to include first hand analysis of urns that come from the core of Belegiš distribution.

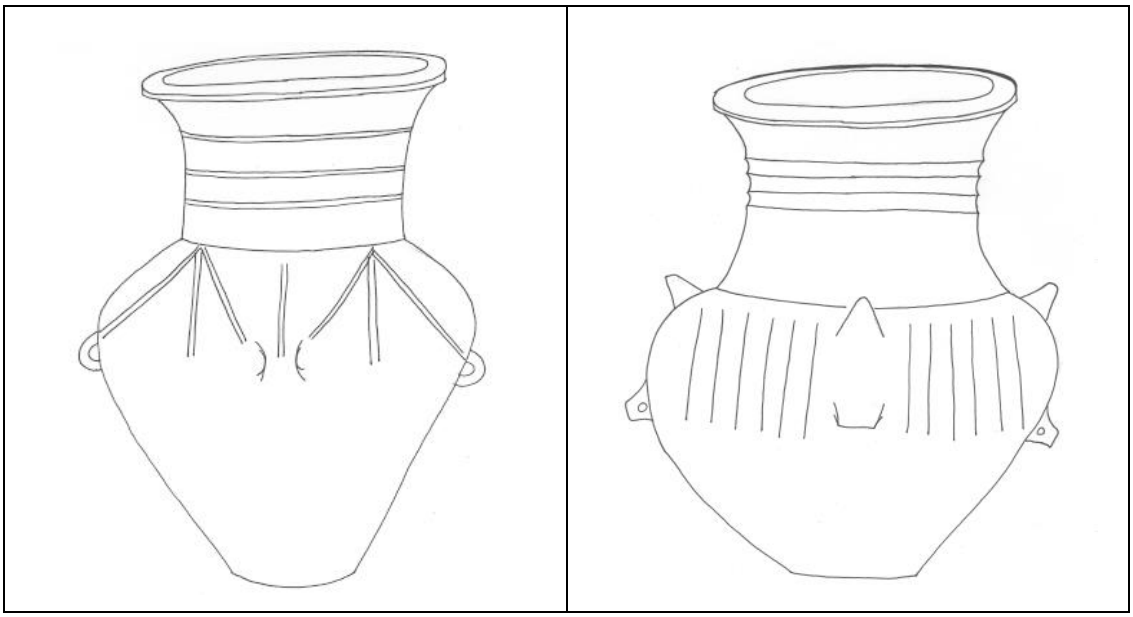


Figure 3.12. Schematic examples of urns characteristic of Surčin (*not to scale*)

3.3.2 Vatin

The site of Vatin is situated in south Banat on the Serbian – Romanian border, and it is after this site that the Early Bronze Age Vatin phenomenon was named (Figure 3.13). The site was found and investigated by local antiquarian Milleker. Initial exploration of the site began in 1893, yielding Bronze Age ceramic vessels primarily

from funerary contexts (Milleker 1894). Milleker and his team returned to conduct investigatory campaigns in 1900, and each year from 1903–1911. The first finds were published in 1905 (Milleker 1905).

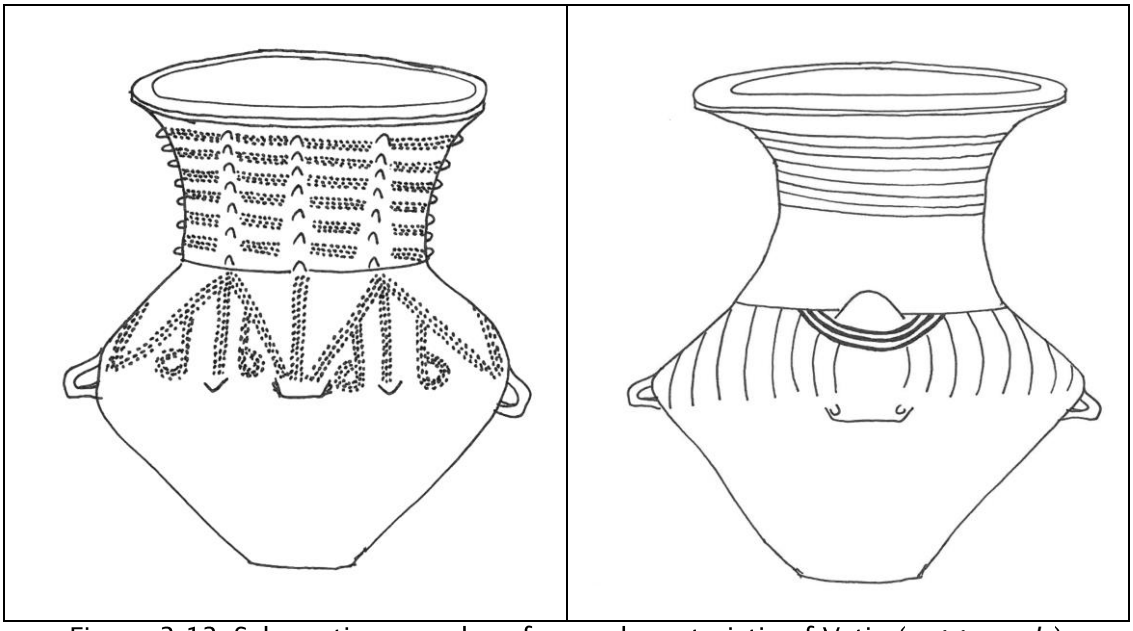


Figure 3.13. Schematic examples of urns characteristic of Vatin (*not to scale*)

Milleker's investigations uncovered a large volume of Bronze Age ceramic material. At that time, all of the ceramic material was thought to be the legacy of the Vatin culture. Since then, typological and spatial analysis has revealed that the material from Vatin spans from the Early to Late Bronze Age and includes a range of material associated with other so-called cultural groups (see section 3.2.1). The Middle and Late Bronze Age ceramic material conforms to Belegiš. As is the case with Surčin, due to the nature of the antiquarian investigations, the internal chronology of the site of Vatin is unknown. 25 Belegiš vessels, housed in the city museum at Vršac, feature in this thesis, but it is unclear what percentage of vessels from Vatin these comprise. The site of Vatin was chosen within this thesis in order to include unpublished data from near the Romanian border. This enables insight into manufacture that is considered on the periphery of the core Belegiš distribution.

3.3.3 Vršac – Stari Ludoš

The cemetery site of Stari Ludoš in Vršac, near the Serb – Romanian border, was first discovered in the late 1890s (Milleker 1891). Between 1911 and 1912 the site was investigated by Milleker. As with all archaeological endeavours at this time in this region, although vessels were carefully recovered, there is no accompanying contextual data. The vessels were also restored using dated conservation techniques. The vessels available for analysis consist of 29 urns that are held in the city museum at Vršac and examples are shown below (Figure 3.14). The exact

percentage of vessels that they represent is unclear. However, they offer an opportunity to create a comparison with neighbouring sites such as Vatin and it is for this reason that this site was included in analysis.

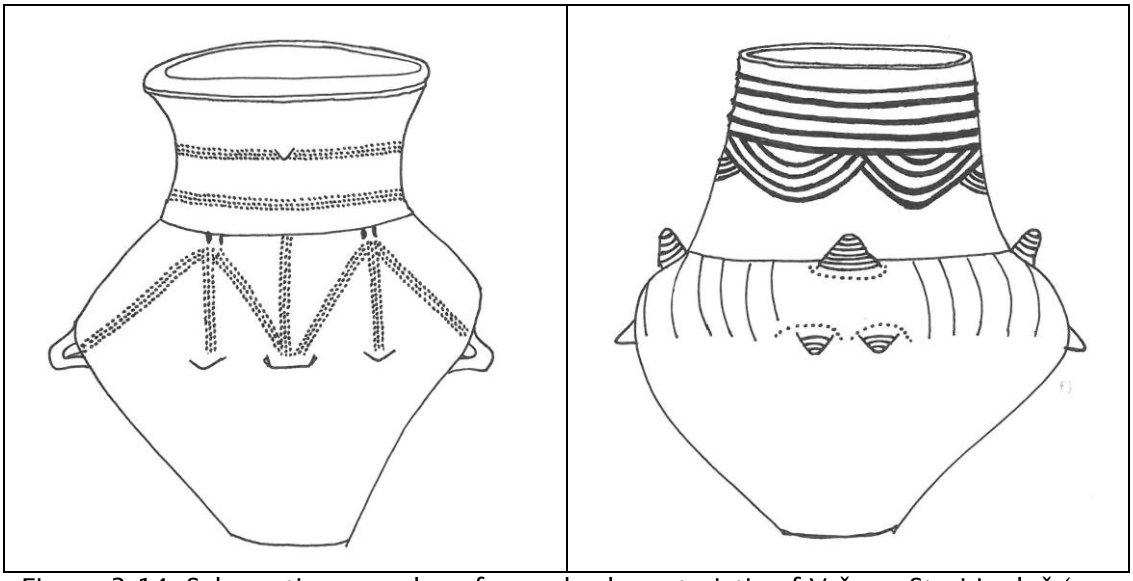


Figure 3.14. Schematic examples of vessels characteristic of Vršac – Stari Ludoš (*not to scale*)

3.3.4 Tolvadia

The cemetery site of Tolvadia is situated at Livezile, near Timisoara in Romania. It was first discovered in 1895 during clay extraction. Milleker became interested in the site and began investigating it in 1900 (Milleker 1903). At this time, 15 graves were uncovered, although it is thought that prior to this 30 to 40 graves were destroyed during the extraction of clay for bricks. 8 vessels stored in the city museum in Vršac were available for analysis (examples in Figure 3.15), but again it is unclear how representative they are of the whole site. As is typical of the early investigations in the region, the internal chronology of the site was not documented and therefore is unknown. Nonetheless these vessels from Romania provide an opportunity for comparison with Belegiš sites in Serbia and it is for this reason that they were included in analysis. The urns were buried with other items; most noticeably one handled ceramic cups. As will be explained in section 3.3.6, this practice is mirrored at the nearby site of Ilandža, where one handled cups also accompanied the urn. In comparison, the cups at the sites of Surčin and Karaburma (sections 3.3.1 and 3.3.7) have two handles. There are several examples of burials at Tolvadia where the cups were used to store the cremated remains. Fragments of bracelets and spiral pendants were also uncovered. We can therefore easily posit that the Belegiš was a complex phenomenon with local variations of depositional practice.

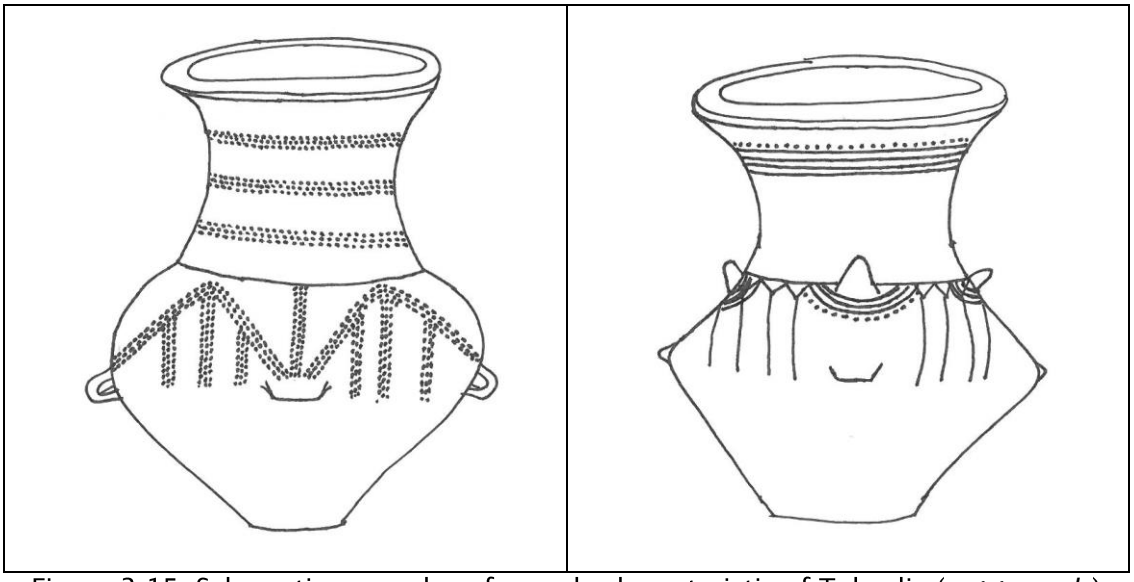


Figure 3.15. Schematic examples of vessels characteristic of Tolvadia (*not to scale*)

3.3.5 Belegiš – Stojića Gumno

The large cemetery of Belegiš – Stojića Gumno at Belegiš was uncovered between 1925 and 1938 during clay extraction at a local brickyard (Vršac 2002:16–18) and it was after this site that the Belegiš group was named. The first of its kind to be thoroughly excavated, the necropolis of Belegiš – Stojića Gumno had two excavation campaigns: from 1954 to 1955 and between 1962 and 1964. During these excavations, 167 cremation burials were excavated and recorded. Each of these graves contained a ceramic vessel with the cremated remains of the deceased. Although in some cases domestic vessels such as bowls and goblets were used to house cremated remains, there were 135 large urns with cylindrical or conical necks and distinct decorative motifs (examples in Figure 3.16). In addition to the remains of the cremated individual, many of these burials contained fragments of clothing and jewellery that accompanied the deceased during cremation. Several urns also had an accompanying cups placed either inside or beside the funerary urn, a custom that is echoed throughout pockets of central Europe, particularly certain areas of Hungary (Bóna 1975).

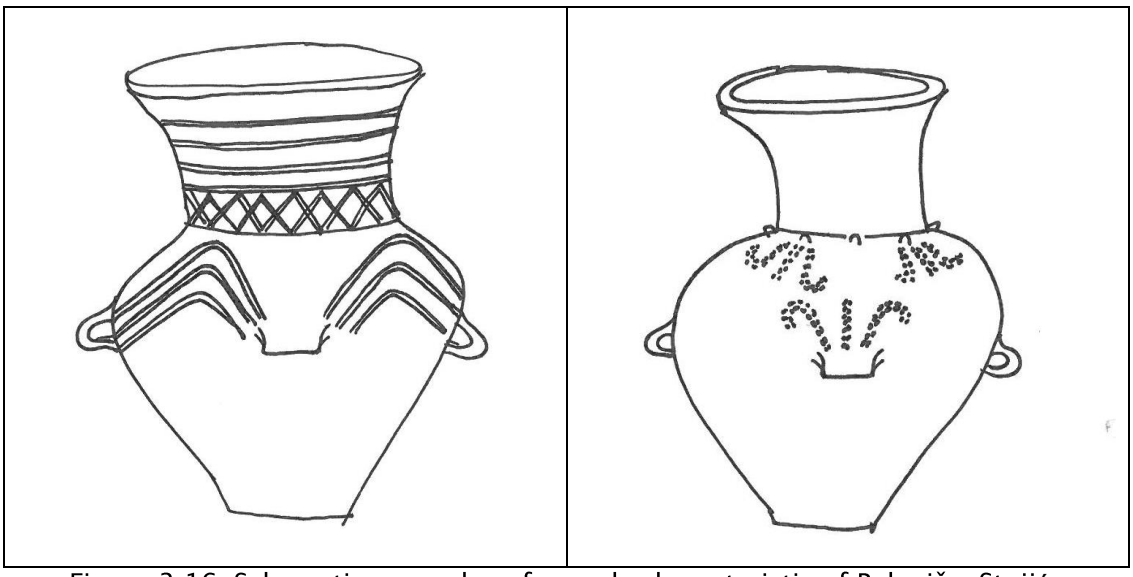


Figure 3.16. Schematic examples of vessels characteristic of Belegiš – Stojića Gumno (*not to scale*)

The chronology of the site, according to Tasić (2005), spans from 1400 to 900BC. His assessment was based on the typological analysis of vessels alongside consideration of stratigraphic sequences. This site can therefore be considered a Belegiš type site and it is for this reason that it was included within analysis.

3.3.6 Ilandža

The Bronze Age site of Ilandža was found by chance during the construction of the Kozjak – Ilandža canal. The graves found at this time were destroyed. In 1948 the Museum of Vojvodina, Novi Sad, opened a 140 by 142 meter trench along the aforementioned canal and a 30 metre trench along the Ilandža – Alibunar canal. During these investigations, 18 cremation graves were found in total. Each of these contained a ceramic urn accompanied by a ceramic bowl used as a lid, and a small one handled cup. Each of the urns contained cremated bones. Eight of these also held burnt fragments of bronze (Marijanski 1957).

A total of eight urns were available for analysis and are therefore included within this study (examples in Figure 3.17). Ilandža presents the northern part of Belegiš distribution close to the border to Hügelgräber distribution. The urns from this site were therefore chosen in order to create a comparison with the well-known Belegiš sites such as Belegiš – Stojića Gumno.

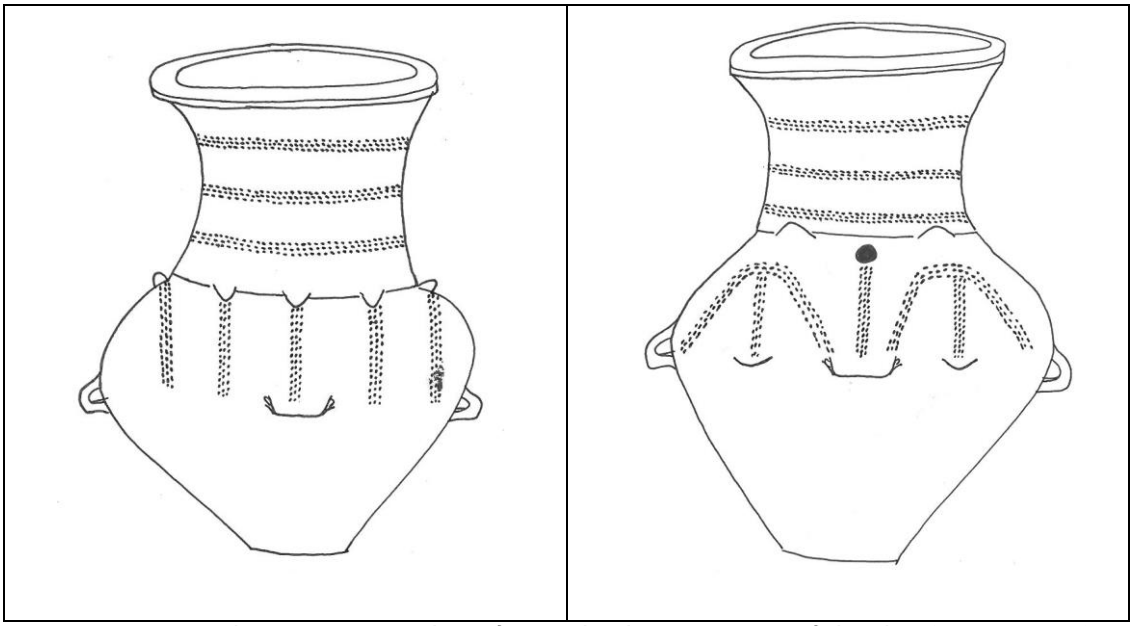


Figure 3.17. Schematic examples of vessels characteristic of Ilandža (*not to scale*)

3.3.7 Karaburma

Following the discovery of Belegiš – Stojića Gumno and Ilandža, the cemetery of Karaburma in Belgrade was excavated by a team from the Museum of Belgrade in the 1960s and 70s (Todorović 1977). A large site on the slopes of Zvezdara near the Danube, 230 cremation burials were systematically excavated and recorded, the majority of which date to the Middle and Late Bronze Age. This cemetery lay south of what appears to have been the accompanying Bronze Age settlement. Parallel investigations were conducted at the cemetery site of Rospi Cuprija that is separated from Karaburma by the Mirijevo brook. These two sites have therefore been treated by scholars as two halves of a whole (Todorović 1977). Denser in the core, and more spread out towards the periphery, Todorović suggests that the burials were marked out individually during the cemetery's use; none were disturbed by later cremations (1977: 109). The majority of the cremations were placed in Belegiš ceramic urns (examples in Figure 3.18). In a similar fashion to those at Belegiš – Stojića Gumno, many were sealed at the top with another vessel. Numerous burials also contained smaller vessels which have been argued to have held food or drink (Todorović 1977: 109). A percentage of burials were also found with remains of clothing and jewellery damaged during the cremation process but with no weapons (Vranić 2002). A small number of early graves were also found with clay models of houses, yet there is no mention of such items having been found at other neighbouring cemeteries.

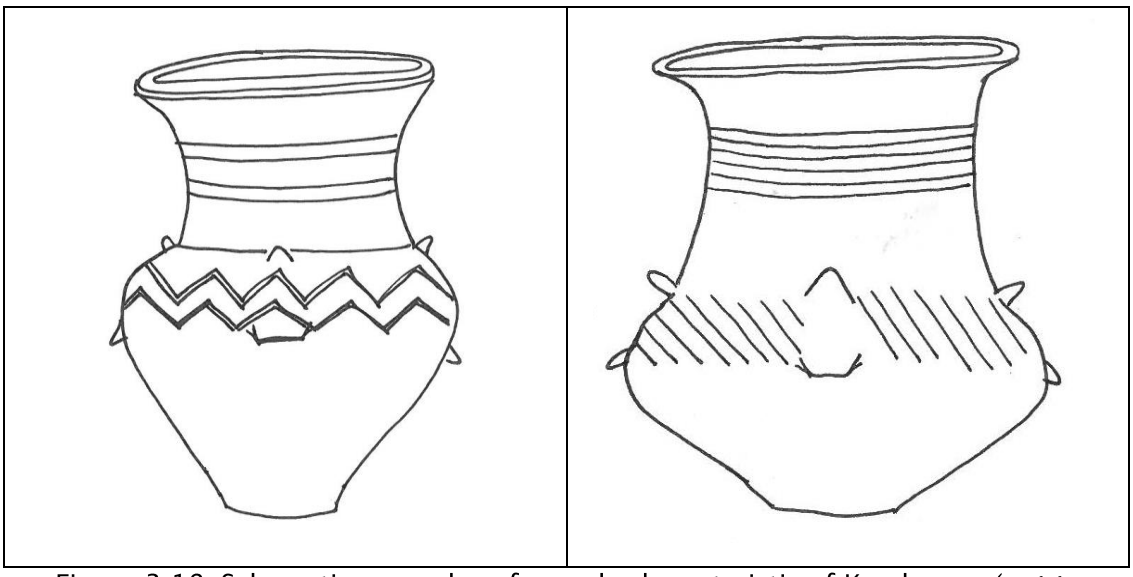


Figure 3.18. Schematic examples of vessels characteristic of Karaburma (*not to scale*)

As is typical for Belegiš cremation urns, the ceramic vessels have cylindrical or conical necks and incised, cord impressed or fluted decoration. It has been noted that there is a very observable variation in the quality of the urns on this site; some are very well made vessels and others are less well made with poorly executed decoration (Todorović 1977). Excavators also found cremations buried in the earth without a ceramic container. It is possible that the remains of these individuals were placed inside a container made of organic material. Torodorić explains these findings as indicative of differences in wealth (1977:109).

The vessels from Karaburma were placed into a tight chronological sequence on the basis of typological attributes which was supplemented by stratigraphic data and the accompaniment of metal objects. Three groups were identified. The earliest vessels were originally thought to belong to group one dating to phase BrB1 of the Middle Bronze Age and were characterised as biconical urns with incised lines and cord impressions as decoration (Todorović 1977: 144). These have since been re-categorised to Belegiš Ia, Ib and Ic which correspond to phases BrC and BrD, roughly 1400 – 1100BC (Tasić 2002). The second group was characterised by the addition of lugs and channelled decoration and were thought to date to phase BrC and D. These have since been classified as Belegiš IIa and IIb and are now placed within phase Ha A2, 1100-1000BC (Tasić 2002). The third group were dated to Ha B, circa 1000 to 900BC and were characterised by exaggerated bosses and fluting as well as more severely tapered necks. They have since been assigned to the Belegiš IIc group (Tasić 2002). 120 Belegiš urns from Karaburma are included in this thesis. They have been included because they present a corpus of vessels from the core of the Belegiš distribution and much of the typological sequencing by Tasić (2002) and Petrović (2006) has been based on these finds.

3.3.8 Stubarlija

The Middle to Late Bronze Age cemetery of Stubarlija is situated on the northeastern edge of the Titel plateau, approximately 800 metres east of the settlement site of Feudvar, located near the village of Mošorin. To the east of Novi Sad, the necropolis spreads for 15 hectares and follows the right bank of the Tisza River. Stubarlija was originally known as Čot and the first archaeological interest dates back to 1951 and 1952 in the form of surveys of material located during the digging of military trenches in 1947 (Medović 2007:6). Nađ and Velenrajter conducted a study limited to the narrow edge of the Tisza plateau during which they reported eleven medieval inhumations (Stanojev 1998). During this investigation, there was no trace of the prehistoric cemetery, or at the very least it was not mentioned (Medović 2007:7). The Belegiš cemetery was discovered in 1987 whilst excavations of the nearby site of Feudvar were conducted by Medović and his team. The graves were located due to extensive ploughing that had taken place that spring, and as a result many were heavily damaged (Medović 2007:5). The cemetery has been characterised as having two main phases; that of the Middle Bronze Age, from 1500 to 1200 BC and the later Bronze Age Belegiš II Gava horizon, around 1200 to 1000 BC (Medović 2007:59). The majority of vessels date to the earlier phase. These dates however are not in accordance with Tasić's (2002) chronological revisions, demonstrating that there is still room for interpretation with the relative dating of these sites.

The earliest phase on this site is marked by an inhumation accompanied by two ceramic vessels, one of which is characteristically late Vatin and another which is encrusted. The grave was situated on the northern part of the cemetery, away from the rest of the graves that were cremations. Given the fact that inhumations signal earlier mortuary practices in this region, this grave has been argued to belong to the Vatin group. Yet it has also been interpreted as the point at which two cultural horizons intersect at the Early/ Middle Bronze Age transition (Medović 2007:59).
A total of 36 graves were dated to the Middle and Late Bronze Age. The Middle Bronze Age part of the cemetery has been argued to be characterised by 25 graves, two of which contained ceramic vessels with incrusted decoration. Two graves held ceramic vessels that have been argued to be Middle Bronze Age (Medoic 2007:60). The remaining eight graves contained vessels that are thought to be Late Bronze Age Gava-Belegiš II phase (Medovic 2007:60). Grave 28 was particularly interesting as it unearthed two encrusted figurines typical of the Middle Bronze Age within a two handled jug decorated with channels typical of later Belegiš II (2007:62). It is thought that the figurines were in circulation for several generations before being finally deposited during the Gava-Belegiš II horizon. Later Gava-Belegiš II material is characterised by its distinctive dark grey colour, heavy burnishing and fluted decoration (2007:66). They have noticeably more tapered necks. Within the 36 graves, there were the cremated remains of 46 individuals, demonstrating that

mortuary practices had shifted from inhumation in the Early Bronze Age to cremation in the Middle and Late Bronze Age. Seven graves in total held the remains of more than one individual; graves 16, 19, 27, 31, 33 and 36 contained the remains of two individuals, the common scenario being that one was an adult and one was a child. The urn from grave 17 housed the remains of four adults and one child (2007:61).

Of 36 graves, 19 contained Belegiš urns have been included within this research. These are held in the Museum of Vojvodina in Novi Sad, Serbia. Ten of these are fully reconstructed, and nine are partially constructed, missing either rims or necks, presumably because of damage sustained during ploughing activities on the site. The assemblage from Stubarlija is a 'mixed' assemblage. The urns themselves have recognisably similar shapes, but it has been noted that there is greater variation when it comes to decoration (Medović 2007) (examples in Figure 3.19). The site was included in analysis due to this variation.

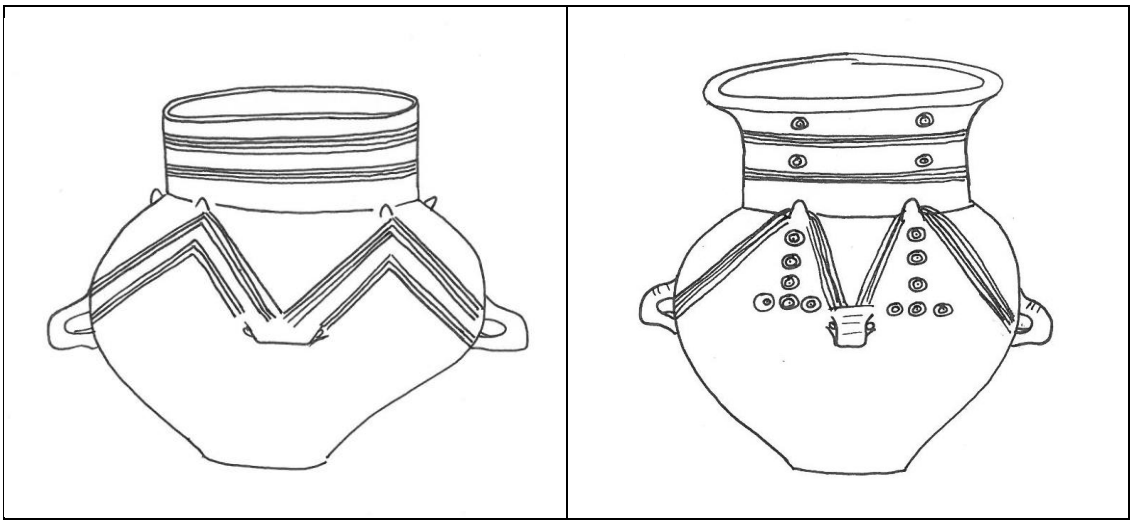


Figure 3.19. Schematic examples of vessels characteristic of Stubarlija (*not to scale*)

3.3.9 Kaluđerske Livade

The most recently excavated cemetery with Belegiš ceramic material is Kaluđerske Livade which was discovered in 1991 during the construction of the highway just outside Belgrade (Petrović 2006). The more modern excavation and post-excavation methods employed resulted in new interpretations of the Belegiš phenomenon. Located on the bank of the river Sava near to the sites of Surčin and Jakovo, the excavated area measured 207 by 45 metres (Petrović 2006:2). 88 Bronze Age burials were systematically excavated by a team from the Museum of Belgrade, although a large percentage of the site had been heavily damaged by the construction of the highway. All of the graves were of cremated individuals that had been placed into Belegiš urns. Parallels in burial practice can therefore be seen between this cemetery and Stojića Gumno and Karaburma. In general, the burials

contained 'modest' grave goods (Petrović 2006:125). The main finds were ceramic vessels the majority of which were used as urns for the cremated deceased. Smaller vessels including bowls were also amongst the types of pottery vessels excavated. The graves often had small metal objects such as pendants and bracelets. These were often damaged by the intense heat of the cremation fire and so we can deduce that they adorned the deceased during such rites. Objects such as tutuli and daggers were discovered in some graves. Several bone objects were uncovered including a finger ring (2006:125-139).

Of the 88 graves uncovered, 10 of these were fully preserved. Out of the partially preserved vessels, 24 were of indeterminable form as only the bases remained. 10 vessels conform to Late Bronze Age Belegiš II types, and were traditionally dated to 1200-1000BC, and the rest were either typically Middle Bronze Age, 1500 to 1200BC, or too fragmented to ascertain form of decoration. These dates do not accord with Tasić's (2002) chronological revisions of the material, and therefore the relative dating of these sites may be tenuous. The vessels are held in the Belgrade City Museum in Serbia (examples in Figure 3.20). Although it was not possible to analyse the vessels first hand, Petrović's (2006) publication of the finds at Kaluđerske Livade serves as a valuable resource for assessing aspects of vessel shape and decoration thus allowing for an in-depth investigation of ceramic design. 47 Belegiš I and II vessels were included in analysis. These were chosen in order to investigate vessels from what is considered to be the core distribution of the Belegiš phenomenon. Additionally, as discussed below, the excavation of these vessels was accompanied with additional analysis of the cremated remains, giving a better idea as to how these vessels were used.

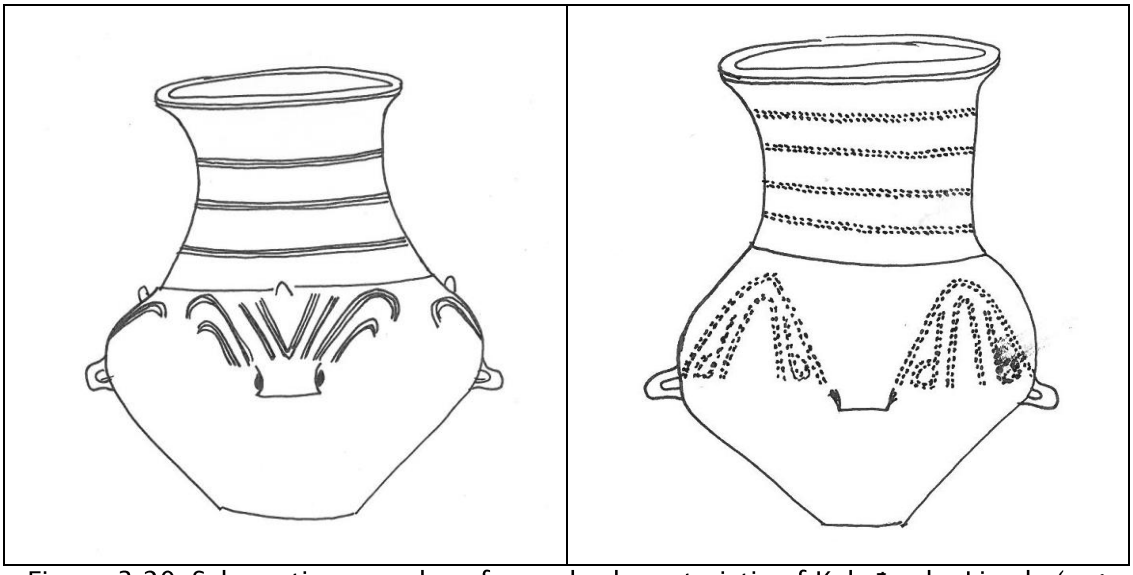


Figure 3.20. Schematic examples of vessels characteristic of Kaluđerske Livade (*not to scale*)

Osteological and DNA analysis was conducted on the cremated remains found within 84 of the funerary urns. It was concluded that of these individual graves 19 were women, 30 were men and 15 were the burials of children (Petrović 2006:161-162). 41 of the individuals were of *maturus* age, between 15 and 25, with more being men than women. This may be due to the fact that young women of childbearing age may have died from complications giving birth. Of those who had reached *adultus* age, 25 to 50 years old, there were more women than men. It also appears that the death rate of very small children was twice as high as older children. Only two of the individuals were of *senilis* age, over 50, and therefore it can be deduced that the life expectancy was dramatically lower than our own. Thus it can be argued that there were higher mortality rates in young children, young female adults and older male adults. Most of the burials were of individuals, with the cremated remains of one person being placed inside one urn. Yet three double burials were also encountered by the archaeologists, each being the remains of a woman and a child who presumably died at the same time (Petrović 2006:198). It has also been argued that the vessels were placed in accordance to the sun, in a north, south east or west direction (Petrović 2006:198).

3.4 Belegiš in Context

As was explained above, investigations at Kaluđerske Livade opened up the discussion of the Belegiš phenomenon by placing slightly more emphasis on the social aspects of the urns through discussion of the osteological evidence. Yet the social narrative of the Belegiš (Petrović 2006) remains weak because it didn't take into account the role of the material culture, specifically the urns, within society. In order to take into account the social significance of Belegiš urns, therefore it is important to think through how the vessel was used. This can be done by broadly reviewing the current archaeological evidence from Belegiš cemeteries and taking into account recent archaeological literature that has focussed on thinking through cremation practices, the life biographies and the social function of the objects involved within the mortuary rites.

3.4.1 Rites of Passage: The Urn as Metaphor

Cremation is a metaphor of destruction, expressing changes in social distinctions (Oestigaard 1999) in a potently visual way (Williams 2004). Fire is the embodiment of transformation, producing changes in the material and social world, and therefore is a powerful medium through which metaphor can be expressed (Graslund 1994; Kaliff 1992, 1997, 1998). The act of cremation itself is a rite of separation, where the body is physically transformed to mirror the deceased's separation from the world of the living. This process does not necessarily remove an individual from society but instead is a means of reintegrating them as a different entity (Fowler 2004:81). Liminal rites are the midway point in this reconfiguration process and are reflected in the placement and transportation of remains within the vessel (van Gennup 1960). The burial rites that accompany deposition allow for the reintegration of the dead into new states of being (Williams 2008).

The Belegiš urns included in this study were all discovered in mortuary contexts and many were found containing cremated bone (Petrović 2006; Torodorić 1977). The literature suggests that the vessels were made purely for this intended use; no use wear has been commented on or observed by the author. This may indicate that there was no domestic use prior to deposition. It is possible, therefore, that vessels were made *ad hoc*, presumably shortly after the death of a community member. Vessels by their cavernous nature lend themselves to being a container. The same is true of the human body which in many traditions is seen as a container of forces (Barley 1994:85). Pottery vessels have analogous links with the human form; ceramic vessels have lips, mouths and bellies, and thus the language we use to describe them is reflective of this. Barley states: *'They are above all vessels and so may be used to refer to bodily cavities – heads, wombs, bellies, rectums. They lend themselves readily to discussions of spirit, conception, essence and the like,'* (1994:99). The vessel can therefore be a skeuomorph of the body, and the body also likened to a vessel.

Belegiš urns therefore may have acted as a metaphor for the human physicality, providing a new physical and corporeal body for the dead (Williams 2004:284). Following the cremation of the body, the cremated ashes would have been collected and placed into the urn. There is no evidence to propose that the dead would have been cremated on site, and therefore it is possible that the urn would have been transported to the cemetery site following cremation. Bronze Age settlement sites in this region are noticeably separate from cemetery sites, and therefore it can be argued that there may have been clear conceptual and geographical distinctions between the abode of the living and realm of the ancestors (Bradley 1990).

Belegiš cremation urns would have been central to funerary customs and therefore were a focal object for facilitating social discourse that was inherently linked to ideas of personhood, identity and social understanding of death (Fowler 2004:39). The vessel's primary purpose was for use as a container for the cremated remains of the dead. The vessel was therefore integral to these rites of passage which were public displays of social, ontological and cosmological beliefs (Hertz 1960, Oestigaard 1999). Belegiš urns were often accompanied with small cups, pendants, tutuli, or daggers (Petrović 2006:125). These items show evidence of heat damage (Todorović 1977: 109) meaning that they would have been placed on the body prior to cremation. These speak of distinct choices made throughout the funerary process and shows that the decisions made during the manufacture of an urn were only part of a whole suite of mortuary choices made.

3.5 Looking Forward

It is clear from the confusion reflected in the characterisation of Bronze Age material culture and chronologies that the Bronze Age in Vojvodina is complex. Typological analysis of the Belegiš and the culture-historical paradigm in which it was situated have been attempts to understand this material complexity, namely the tension between similarity and difference, within a single ceramic phenomenon.

The issues with traditional approaches to Belegiš ceramic cremation vessels are threefold. The first and most prominent of these is that due to the complexity of the material and the lack of absolute dating, the typological classification and the chronology of the material is not robust. There are discrepancies with dates given to the material that have still yet to be satisfactorily ironed out. Nonetheless, it is clear from the stratigraphic evidence presented by Torodorić (1977) that Belegiš I and II distinctions presents us with a loose chronology which is advantageous to the study of tradition, practice and creativity over time.

Another challenge has been conceptualising what the Belegiš urn phenomenon is. The current view of Belegiš as a distinctive cultural unit has been moulded by the cultural-historical paradigm in which it was formed. The tendency with this approach is to place the phenomenon within distinct cultural boxes. Confusion has arisen when material similarities with so-called neighbouring cultural groups, such as the Dubovac Žuto Brdo and Gava occur. Similarly, interpretative issues materialise when sites include mixed assemblages, for example characteristically Belegiš material accompanied by contemporary material of another type, such as that from the site of Stubarlija.

Finally, the focus on typology and descriptions of the material has meant that social questions relating to the people producing the ceramics in this area have not been at the forefront of investigation. Narratives of the Belegiš rarely include discussions of people at all. More recent publications of cemetery sites such as Kaluđerske Livade have incorporated a more socially inquisitive focus, aided by the analysis of the cremated remains of individuals. There is however potential for asking new questions of the material and implementation of new methodologies of analysis.

A focus on tradition, practice and creativity within the manufacture of Belegiš urns enables exploration of the processes that contributed to similarity and difference within this ceramic phenomenon. Throughout this thesis the concept of tradition promotes an investigation into the continuous underlying principles that guided the manufacture of the urns. This exploration is consequently rooted in identifying the manufacturing similarities that run through the dataset. A focus on practice enables insight into the varied expressions of these principles. Under this spotlight, the concept of gesture is argued to expand the current understanding of how the individuals operated within communities of practice. Finally, creativity is offered as a final lens which encourages an exploration of deviation from normal manufacturing methods. This broadens the socially orientated discussion of the material by placing the responsibility for these variations with individual makers.

Chapter 4
Methodology

4.1 Introduction

Exploration of the Belegiš phenomenon through the lenses of tradition, practice and creativity requires a rich and detailed data set that is rooted in analysis of how vessels were made. The site of Surčin, which comprised 72 partially reconstructed vessels, served as a much needed pilot study that allowed for a methodology to be devised and specifically developed for Belegis urns. It was crucial that the methodology accommodated the internal logic of the assemblages. This methodology was then applied to vessels from the other Belegiš sites of Ilandža, Tolvadia, Stubarlija, Vatin and Vršac – Stari Ludoš, (Table 4.1). Data was also gathered from the publications of the cemetery sites of Belegiš – Stojića Gumno Kaluđerski Livade and Karaburma, although unfortunately it was not possible to obtain first-hand access to these vessels.

Site Name	Data Type	Number of Vessels
Belegiš – Stojića Gumno	Secondary	96
Ilandža	Primary	7
Kaluđerski Livade	Secondary	47
Karaburma	Secondary	120
Stubarlija	Primary	20
Surčin	Primary	72
Tolvadia	Primary	8
Vatin	Primary	25
Vršac – Stari Ludoš	Primary	29
TOTAL		**424**

Table 4.1. Sites and Data Type

It is unfortunate that first hand analysis of vessels from Karaburma, Kaluđerske Livade and Surčin could not be conducted. For a thesis focussed on the manufacture of vessels, obtaining permission to examine technological traces on these vessels would only stand to strengthen the arguments made throughout this thesis and allow for a more in depth discussion of the vessels. This meant that fabric analysis and the examination of other technological traces could not be conducted, and the specific ways in which the vessels were made could not be ascertained. Despite this, a key feature of the vessels is their decoration, and for a number of sites this had been documented in the form of technical illustrations within publications. Admittedly this documentation can be considered as old-fashioned and there is a possibility that the illustrations may not have been accurate. Nonetheless, the publications allowed for an exploration of shape and decoration as could be conducted. Given the decorative nature of the vessels, the illustrations served well enough to inform on the types of motif used and the decorative methods executed

and therefore were a sufficient resource for probing similarity and difference between the vessels. Vessels from the sites included within this study were classified as Belegiš I or II by the author according to the criteria outlined in Chapter 4. This meant that there is consistency in their groupings.

4.2 Analysis of a Technological Repertoire

Examination of the Belegiš through the lenses of tradition, practice and creativity requires a means of accessing and pinpointing uniformity and variation within vessel manufacture. The examination of a technological repertoire enables the generation of a detailed dataset from which trends informing of tradition, practice and creativity can be explored. A technological repertoire is a suite of technological practices that is drawn from in order to manufacture an object. For ceramic vessels this includes the preparation of the clay, formation methods, vessel shape, decorative practice, vessel finish and firing, each which exhibit technological traces. The probing of these technological traces therefore requires a methodological route of access.

4.3 Repertoires of Manufacture: Assessing Methods of Production

Although there have been various frameworks, the *chaîne opératoire* is by far the most widely used framework in the investigation of craft technology. It refers to the series of operations that transforms raw materials into a finished product. The term was first coined by French anthropologist Leroi-Gourhan (1943), who sought to investigate the relationship between technology and society. It was argued that operational sequences are socially situated (Lemmonier 1991:16).

The *chaîne opératoire* is made up of gestures, technical processes, discursive knowledge and the object itself, and is deeply rooted in social theory (Mauss 1935, Dobres 2000). Analysis of it therefore doubles as a conceptual framework and a methodology of investigation, providing the analytical means by which the technological choices embedded within production can be detailed. It offers an empirical and interpretive link between the individual craftsperson and the making of the object (Dobres 2010) by enabling identification of 'reference routines stored in the brain' (Gowlett 1990:85) embedded within bodily gestures. Such an approach sheds light on the 'life history' (Gosselain 1992) of an object to transcend debates on typology and function and explore the social underpinnings of production (Dobres 2000). Use of *chaîne opératoire* analysis therefore enables exploration of the underlying rules (Schlanger 1991, Renfrew and Zubrow 1994), mental templates (Deetz 1967) and psycho-motor schemata (Gosselain 1992) embodied within

technique. Furthermore, it allows for a glimpse of past cultural ontologies through the lens of technology (Mauss 1934).

The *chaîne opératoire* approach was initially used to determine the manufacturing sequence of lithic tools (Boëda et al. 1990) but has since been reconfigured to analyse ceramic technology (Berg 2003; Costin 1991; Gosselain 1992, 2000; Roux 2003; Rye 1976, 1981; Shepard 1985; Sillar 2000). For those concerned with ceramic variability, it has enabled an in-depth review of variability within technology which has in turn facilitated the elucidation of the social dynamics of production. The *chaîne opératoire* has been a useful means of documenting similarity and difference from a technological perspective. The predominant focus has been on recreating the technological sequence with precision. Like a recipe in a cook book, researchers of the *chaîne opératoire* present a decision by decision account of manufacture. Although this works well, the *chaîne opératoire* itself comes with conceptual baggage, primarily the idea that making a vessel is a linear step by step process and that none of the stages of manufacture are revisited during the crafting of an object. To avoid falling into that potential trap, this study documents the technological traces of manufacture without recreating an operational sequence. Instead these traces are used to distinguish the technological repertoire; a resource of technological knowledge that was shared by members of a community of practice.

Consideration of production is standard archaeological practice for the archaeologist trained in Anglo-American approaches to material culture. Yet in the case of Belegiš vessels, enquiry into ceramic technology has not been previously conducted. An exploration of tradition, practice and creativity remedies this by applying this theoretical framework to Belegiš assemblages, and tailoring it to meet the requirements of the research question. Within this research, the technological repertoire of a vessel refers to the series of actions performed in the production of a Belegiš vessel, and thus formed the basis for analysis. Six key aspects of vessel manufacture were included: clay preparation, vessel forming methods, vessel shape, decorative methods, surface finishes and firing. These variables offer insight into all of the stages of vessel manufacture.

4.3.1 Analysis of Fabric: The Acquisition and Preparation of Clay and Temper

The selection and preparation of clay and temper is the preliminary stage in the manufacture of a vessel. The majority of clay used in prehistoric Europe was sedimentary clay. Environmental processes transported this clay from its original place of formation and as a result the clay became broken down and mixed with

other materials (Gibson 2002:35). In its unprepared state it is full of impurities such as rocks and organic matter (Rye 1981). Some of these additions are of benefit to potters because they render the clay easier to manipulate and are especially beneficial for vessels that are to be open fired (Gibson 2002:35). As an example, gabbroic clay from the Lizard peninsula in Cornwall is a particularly malleable resource in its raw state, and often needs no additional temper. For this reason, it was a staple clay source for prehistoric potters in and around the south of England (Harrad 2004) demonstrating the technological knowledge that underpinned clay acquisition in this area. Conversely, the presence of certain inclusions in raw clay has been shown to result in complications. Larger inclusions can increase the risk of difficulty during firing; the build-up of steam pressure in the clay wall as a result of heat exposure can force larger-sized inclusions to shoot out (Gibson and Woods 1997). Known as spalling, this leave traces in the form of discs of clay that have been blown off the vessel's surface (Gibson 2002:48). Consequently larger impurities such as small rocks and organic matter are often picked out from the clay to avoid such happenings.

The incorporation of temper such as quartz, crushed-up pottery known as grog, igneous rocks and organic matter can have both technical and functional uses (Schiffer and Skibo 1997). Most non-clay materials strengthen the clay and make it more workable, yet some additions are better suited to this than others (Gibson 2002:36) meaning that clay and temper choices have an impact on subsequent stages of vessel manufacture. Temper also increases thermal shock resistance. This is useful during firing, particularly for bonfire fired vessels because it prevents the pot from cracking during exposure to intense heat. Resistance to thermal shock is also a requirement for vessels, such as cooking pots, which have a functional need to withstand high temperatures (Rice 1987).

Some studies have argued that the inclusion of temper may additionally have had social significance for the potters. For example, the inclusion of grog within prehistoric pottery has been reinterpreted as a social mechanism for remembering the ancestors (Hoskins 1998). Aspects of the manufacturing repertoire may therefore also speak of associated cultural meaning as well as technological and functional requirements.

Clay and Temper Identification

Archaeological ceramicists in Britain are familiar with creating fabric series for pottery types. These descriptions are based on the observation of inclusion size and quantity along with the mineral composition of the clay matrix (PCRG 2010). Analysis of vessel fabric has been demonstrated as an invaluable tool for the study of vessel distribution and trade (Williams 1983), as geological characterisation of

the clay used can help ascertain whether a vessel was produced locally or imported. More recent research has used fabric series to discuss production, technological choices and prehistoric potting traditions in Central Europe (Budden 2007, 2008; Kreiter 2007; Michelaki 2006, 2008).

The size, shape, frequency and sorting of inclusions were examined initially using a 10-20x hand lens (Table 4.2.), using the percentage inclusion estimation chart implemented by Mathew, Woods and Oliver (1991) as well as Barraclough's (1992) inclusion sorting chart and scale of roundness chart (see Figures 4.1, 4.2 and 4.3). This is the method established by the Prehistoric Ceramics Research Group (PCRG 2010) which allows for the detailed characterisation of fabrics to distinguish clay preparation techniques. 30 samples from the sites of Surčin, Vatin and Vršac – Stari Ludoš were taken. Samples were only taken from a vessel where minimal damage would occur. Thin sections of each sample were analysed under polarised light to determine the mineral composition of the clay (Middleton and Freestone 1991). These were used to probe similarity and difference in clay preparation.

Variables Recorded	**Scale**	**Method**
Inclusion Type	N/A	10x hand lens and Petrological Analysis
Percentage of Inclusions	In 5% units	10x hand lens and Inclusion Chart
Size of Inclusions	to nearest 0.1mm	Callipers/ Microscope
Sorting of Inclusions	very well – poorly	Inclusion Chart

Table 4.2. Variables Measured for Analysis based on PCRG Guidelines

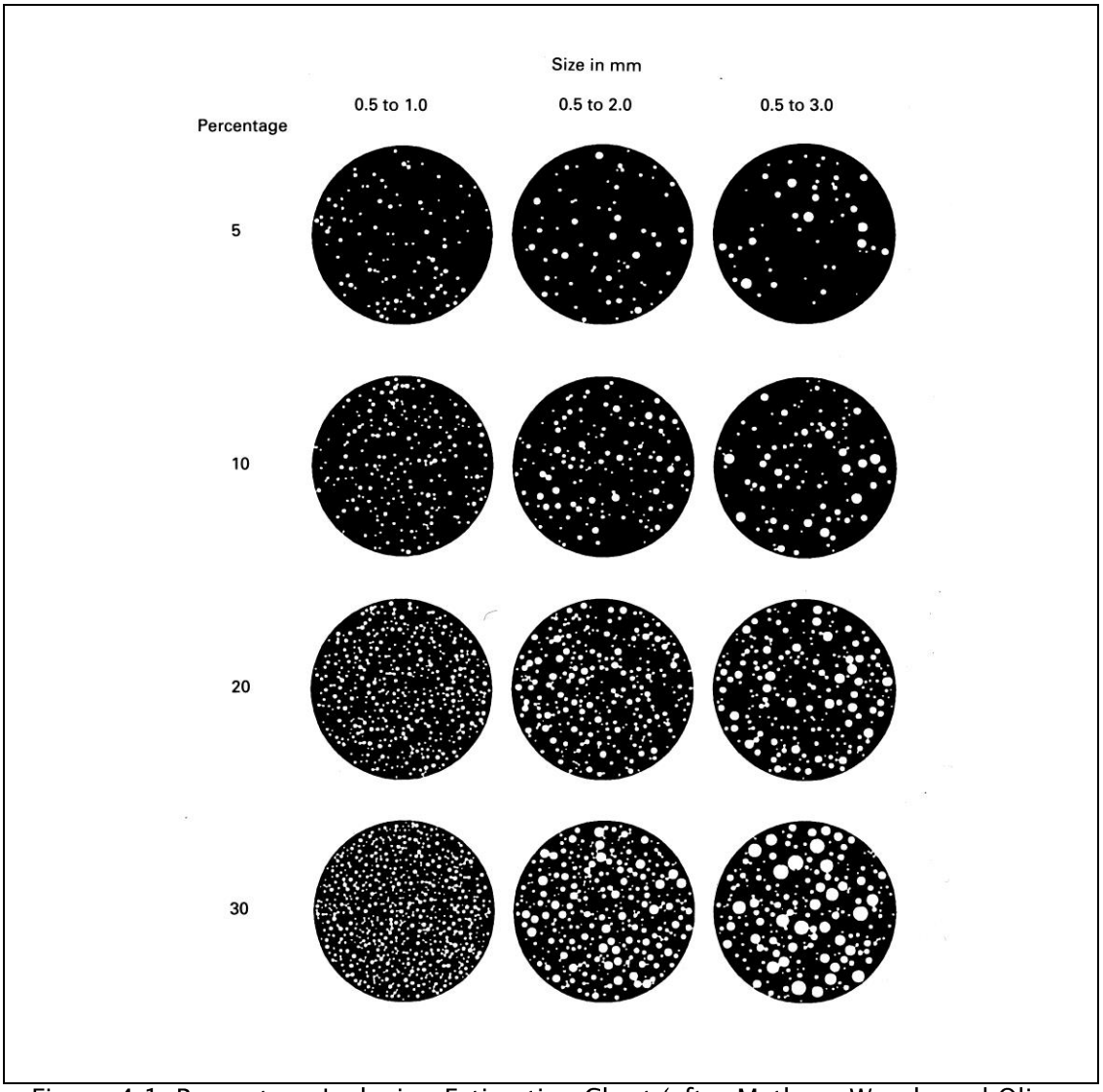


Figure 4.1. Percentage Inclusion Estimation Chart (after Mathew, Woods and Oliver 1991)

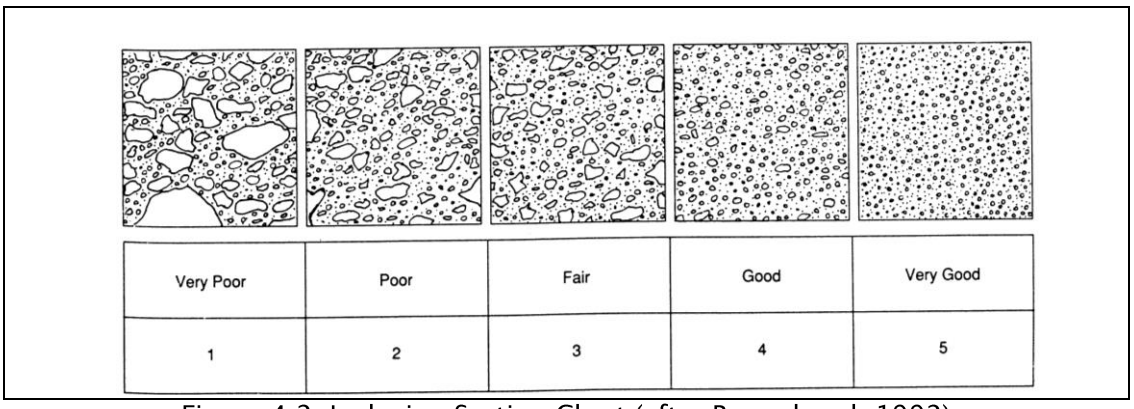


Figure 4.2. Inclusion Sorting Chart (after Barraclough 1992)

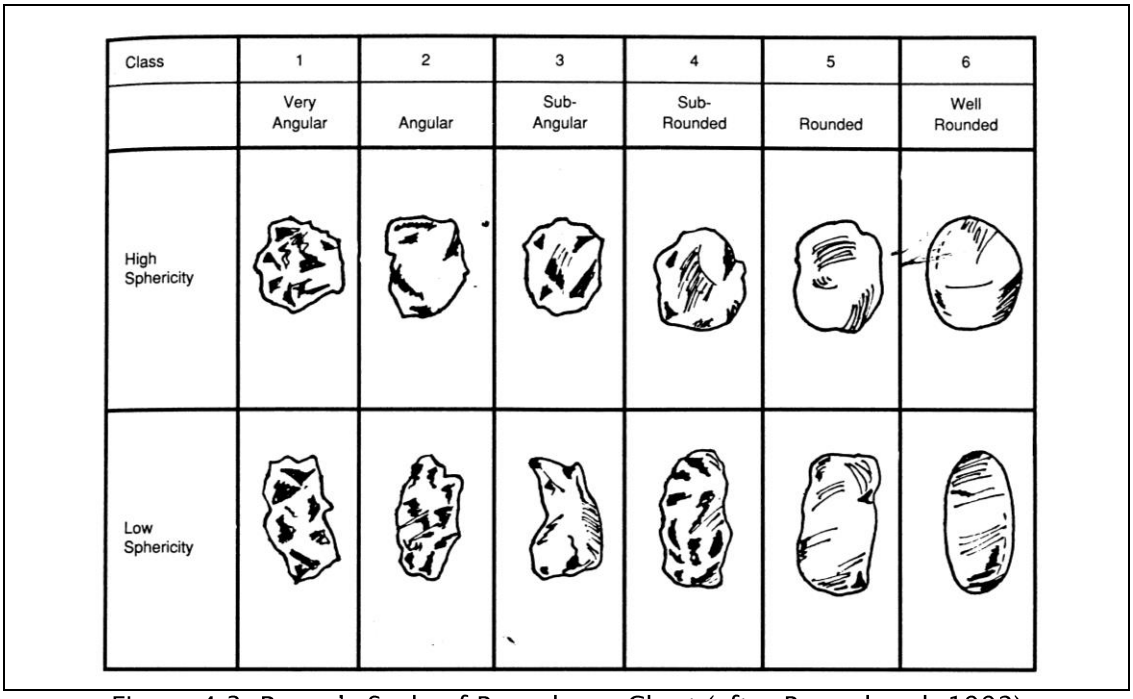


Figure 4.3. Power's Scale of Roundness Chart (after Barraclough 1992)

4.3.2 Shaping Up: Vessel Forming Methods

Where visible technological traces on vessels were located and documented in order to ascertain Belegiš urn building methods. Several ceramic forming methods have been identified throughout the European Bronze Age, determined through analysis of technological traces left by the maker (Gibson and Woods 1997). These include pinching, slab-building, coil-building, paddle and anvil methods and the use of moulds. Each of these have a distinctive signature (Table 4.3.). Although making a pot requires a certain level of skill, it has been noted that basic vessel forming skills can be easily acquired (Budden 2007). The simplest of pot-building techniques involves pinching out a vessel shape from one lump of clay and has been demonstrated to have been used throughout prehistory for small vessels (Gibson 2002). Vessels made using this method often display finger indentations and do not show evidence of joins (Leach 1940:64).

The slab-building method utilises large flat slabs of clay that are either rolled or beaten out. These are then joined together by pressing or smearing (Rye 1981:71). The visibility of the traces left by slab-building methods depends on the preservation of the vessel and how well-made it was (Budden 2007, 2008); detection of this technique is not always easy (Gibson 2002:42), although weak bonds within manufacture can result in a clear visible surface break along the join (Gibson and Woods 1997). Additionally slab-building can be determined through identification of regularity in vessel wall thickness and usually vessels made using this method have a slightly asymmetrical shape (Budden 2007:95). This method of manufacture is beneficial for making very large vessels (Rye 1981: 71). Coil-

building methods exhibit similar technological traces to slab building. Such methods of vessel formation use long clay 'ropes' which are individually joined together and then smoothed to create the look of seamless joins (Rice 1987). Again, weak bonds between clay pieces can result in fractures along the seams. However, in contrast to slab-built pots, coil-built vessels tend to have more irregular wall thicknesses and this method is often used for small to medium sized vessels such as cups and bowls. Pots can also be made using concave or convex moulds made from ceramic, dug out earth or leather (Budden 2007:96). Clay is placed into or onto the moulds. This encourages standardised vessel shapes and is often used for simple vessel forms such as bowls.

All of the above methods may be used in conjunction with a paddle and anvil which involves using a wooden paddle and beating the pot out into shape. This creates smoother surfaces, a more bulbous shape and thinner vessel walls. For this reason, technological traces of extremely well-made vessels are not always easily detectable. It should also be noted that vessels may be made using a combination of different techniques (Rye 1981:81).

Technique	Technological Trace
Pinching	- Absence of joins. - Finger indentations (Leach 1940: 64).
Coil-building	- Spiral/ horizontal joins, short distance apart. - Irregular wall thickness.
Slab-building	- More regular wall thickness. - Slumping of larger vessels and asymmetry in shape. - Rolled out slabs – even surface. - Beaten out slabs – uneven surface finish.
Paddle and Anvil	- Absence of joins. - Thin walled vessels (Rice 1987: 137) that are very symmetrical (Barley 1994:32).
Mould	- Vessels all a standard shape and size. - Simple forms such as a bowl (Rye 1981:81).

Table 4.3. Technological Traces of Forming Techniques (after Leach 1940, Rice 1987 and Rye 1981)

4.3.3 Analysis of Vessel Shape

Within standard ceramic examination, size measurements of each vessel such as rim diameter, base diameter, wall thickness and vessel height are usually included. For the pilot study at Surčin, rim, neck, belly and base diameters were measured to the nearest millimetre with callipers (numbers 1, 2, 3, and 4 on Figure 4.4), shoulder and in addition base angles to the nearest 5 degrees with a goniometer (numbers 7 and 8 on Figure 4.4), neck, full vessel and handle heights to the nearest millimetre with callipers (numbers 9, 10 and 6 on Figure 4.4), and handle length to the nearest millimetre with callipers (number 5 on Figure 4.4). In order to explore vessel sizes, these measurements were subsequently recorded for the vessels from the sites of Vatin, Vršac-Stari Ludoš, Tolvadia, Ilandža and Stubarlija, where first-hand primary data could be obtained. This enabled an empirical representation of vessel shape.

Vessel shape has been argued to be influenced by several factors including socio-cultural preferences (Rice 1987, Sinopoli 1991), forming method (Budden 2007) and functional requirements (Schiffer and Skibo 1997). The pilot study of vessels from Surčin enabled elucidation of the shared characteristics of vessels within the assemblage. Each vessel has a biconical form complete with cylindrical neck and everted rim. The majority of vessels also display four handles placed on the most protruding part of the belly, at 90 degree intervals.

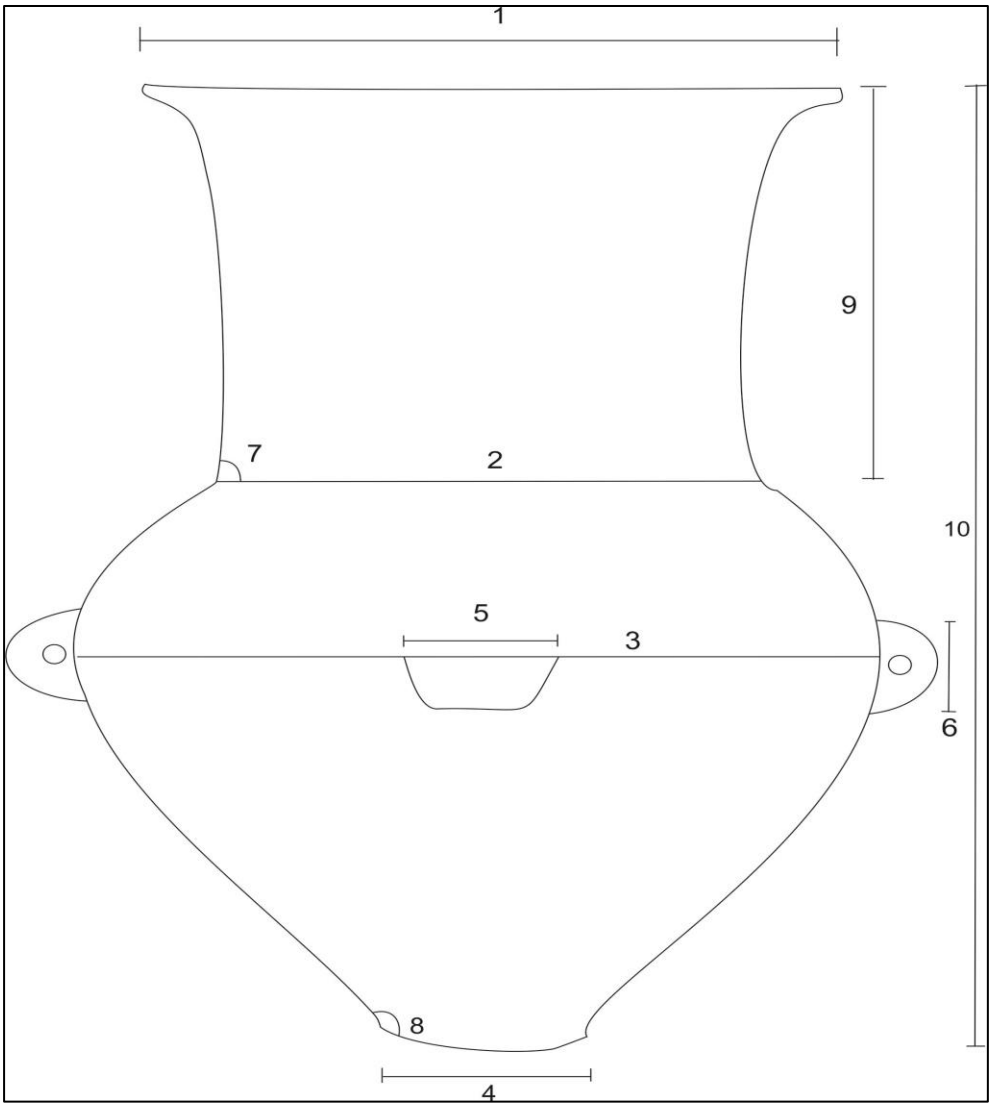


Figure 4.4. Vessel Measurement Variables

Numbers Relating to Figure 4.4/Variables		Definition	Scale	Equipment
1	**Rim Diameter**	Measured from the exterior.	mm	Rim diameter chart
2	**Neck Diameter (bottom)**	Circumference of the neck at neck to body inflection. Measured from the exterior.	mm	Callipers
3	**Maximum Vessel Diameter (belly)**	Circumference of vessel at point of maximum diameter. Measured from the exterior.	mm	Callipers
4	**Base Diameter**	Circumference of vessel base measured from exterior.	mm	Callipers
5	**Handle Width**	Horizontal width of handle from the vessel wall to the exterior of the handle.	mm	Callipers
6	**Handle Height**	Vertical height from the top of the handle to the bottom.	mm	Callipers
7	**Neck to Shoulder Angle**	Orientation of vessel at neck to body inflection. Measured on a horizontal plane.	Nearest 5 degrees	Goniometer
8	**Base Angle**	Orientation of vessel base measured on horizontal plane.	Nearest 5 degrees	Goniometer
9	**Neck Height**	Vertical height of the neck from top of the rim to neck to body inflection.	mm	Callipers
10	**Whole Vessel Height**	Vertical height of vessel from top of rim to base.	mm	Callipers

Tables 4.4. Vessel Measurement Variables

During preliminary analysis of the urns from the site of Surčin, distinctions in shape attributes became clear. Forms of rim, neck, neck to shoulder distinction, belly and handle were categorised and coded according to key characteristics (Figure 4.5). These were aided by some of the measurements taken, in particular the neck to shoulder and base angles. Rims were classified according to the extent of eversion and the roundness of the outer edge. Necks were categorised based on their thickness and gradient. Cylindrical necks have similar rim and bottom neck diameters, whereas tapered necks have a wider bottom neck diameter. Thin necks have considerably smaller diameters than the vessel's belly diameter, whereas thick necks are grouped due to the fact that the bottom neck diameter is a closer measurement to the belly diameter. Neck to shoulder distinctions were classified according to the angles measured at Surčin; distinct neck to shoulder joins have an angle of roughly 120 degrees, semi-distinct neck to shoulder joins have an angle of roughly 135 degrees and merged have an angle of approximately 150 degrees. Handles were identified according to whether they were tunnel shaped or displayed evidence of being pinched slightly. Categories of lug were based on whether they were solid or showed signs of being pierced through the middle. Belly classifications were created according to the curvature of the belly, either being fully rounded, semi-rounded with a slight angle or angular. The elongation of the bottom of the

vessel was based on the length of the neck compared to the overall height of the vessel. Vessels with elongated bottoms were distinguished by short necks in comparison to overall vessel height. Squat vessels are categorised due to longer neck lengths in comparison with the overall vessel height. Other measurements such as diameters and lengths were documented in order to probe vessel size.

These categories based on vessels from Surčin are depicted and summarised in figure 4.5, and were used to analyse vessels from the remaining sites. Frequencies of each variant were recorded. The codification of these forms allowed for the shape of each vessel to be deconstructed and for similarity and difference to be quantified. In addition to this, using these codes meant that data relating to shape could also be obtained from published volumes where technical illustrations had been included. This was particularly beneficial for the sites of Belegiš – Stojića Gumno, Kaluđerski Livade and Karaburma where only secondary data in the form of publications was available for analysis.

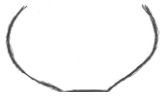
Rim	**R1**  Slightly everted. Flat edge.	**R2**  Fully everted. Flat edge.	**R3**  Slightly everted. Rolled edge	**R4**  Straight and rolled	
Neck	**N1**  Thin and cylindrical.	**N2**  Thick and cylindrical	**N3**  Thick and slightly tapered	**N4**  Thick and fully tapered	**N5**  Thin and funnel shaped
Neck/ Shoulder	**NS1**  Distinct	**NS2**  Semi-distinct	**NS3**  Merged		
Handle	**H1**  Tunnel	**H2**  Pinched	**H3**  Lug	**H4**  Pierced Lug	
Belly	**B1**  Fully-rounded	**B2**  Semi-rounded	**B3**  Angular		
Squatness	**Elongated**  Extended bottom/ base	**Medium**  Medium bottom/ base	**Squat**  Short bottom/ base		

Figure 4.5. Shape Attributes and Codes Used in Data Collection

4.3.4 Decoration

Although not all Belegiš urns display decoration, a large proportion do. Figure 4.6 highlights five stages of data collection that related to the decorative process. These were: the spatial layout of decoration, choice of motif, configuration of motif, decorative method used and the execution of the decorative method. In order to bring analytical clarity, the latter is further split into two, breaking down technical procedures of decorative technique in more detail and also assessing the gestures embedded within the use of a decorative method. Despite the fact that decoration has been the focus of traditional typological investigation of Belegiš urns, the type of analysis presented here has not been previously carried out on this material.

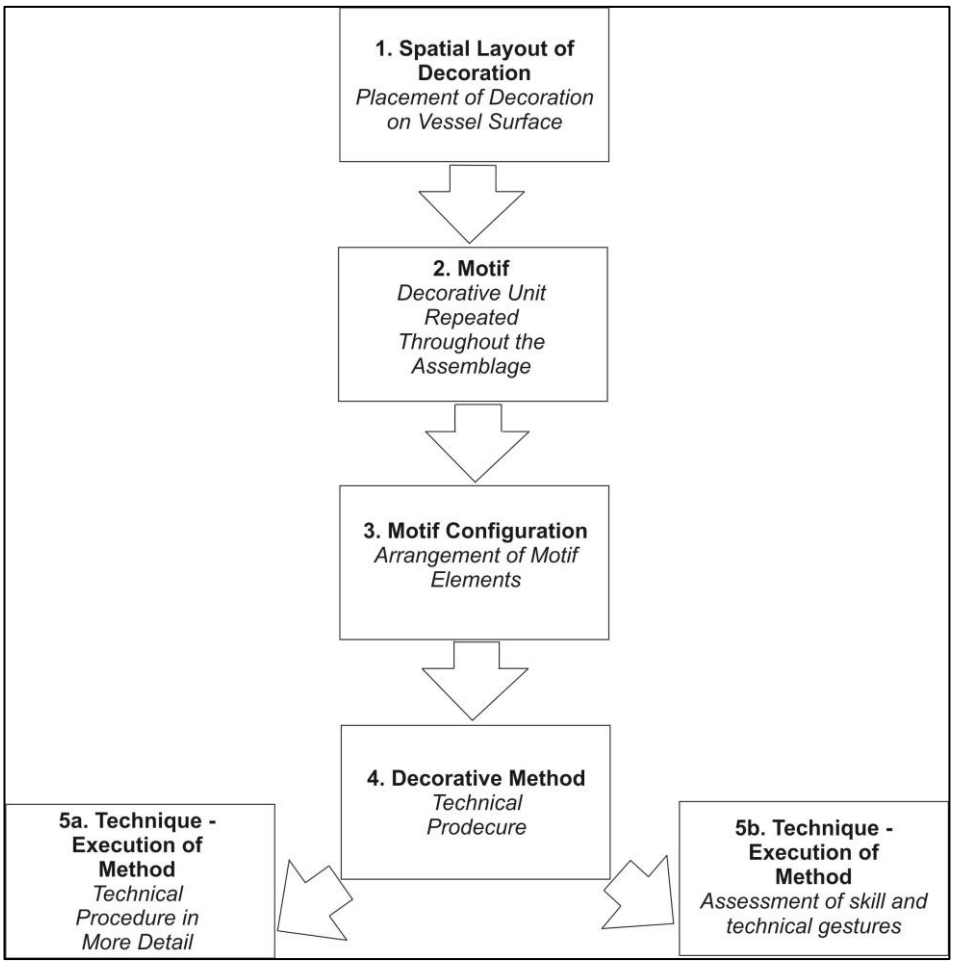


Figure 4.6. Stages of Decoration Analysis

Spatial Layout of Decoration

Analysis of the spatial layout of decoration allows for exploration of similarity and difference in the placement of decoration (Amsden 1936; Bunzel 1929) for Belegiš urns. The spatial layout of decoration refers to the zonal placement of motifs on the vessel's surface (Figure 4.7 and 4.8). Belegiš urns are shaped in such a way that specific zones emerge, noticeably the neck, shoulder and upper belly. These can be further understood in terms of the presence and absence of decoration. In looking more closely at the way the in which decoration is placed around the vessel, it becomes clear that the three-dimensional shape of the vessels drives the use of these zones. The methodology developed here for exploring the way in which the shape of the vessel and the placement of decoration interact is therefore rooted in the three-dimensionality of the object.

Figures 4.7 and 4.8 are two dimensional representations of a typical Belegiš urn that attempt to schematically capture the three dimensional vessel shape and decorative placement. They display the zones of decoration placement that became apparent during analysis of vessels from Surčin. This can be thought of an underlying

template that guided makers during the decorative process because they were shared by all the urns from Surčin. The decorative zones of the vessel have been split up into three main segments that were guided by the shape of the vessel, with zone one corresponding to the neck, zone two correlating to the shoulder and zone three to the belly (Figure 4.7). The way in which decoration was placed within each of these zones allowed for further segmentation of these zones. As the diagram shows, based on the presence and absence of decoration within zone 1, three subzones became apparent, and these were coded as subzones 1A, 1B and 1C. Zone two and zone three were each split further into eight subzones. Each of these subzones aligns with the placement of the vessel's handles; decoration in zone 2 and 3 is either placed above or between the handles. Analysis indicated that decoration that was characteristically similar was almost always systematically replicated either above each of the four handles or between each of the four handles. In light of this, the subzones above the handles were labelled 2A and 3A, and the zones between the handles 2B and 3B. On each vessel there is four of each subzone category, and these are guided by the placement of four handles, as depicted in Figure 4.8.

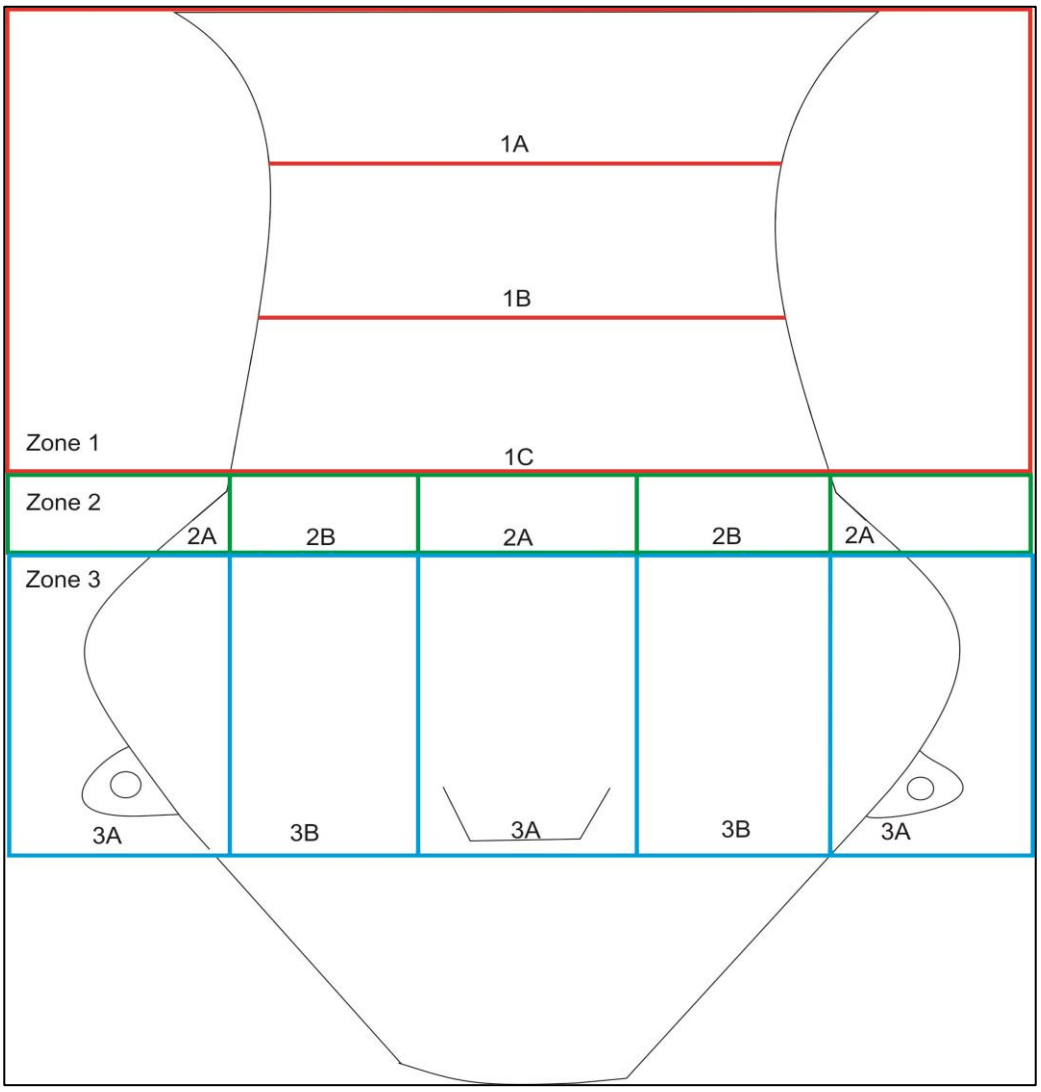


Figure 4.7. Spatial Layout Template used in the Analysis of Decorative Layout

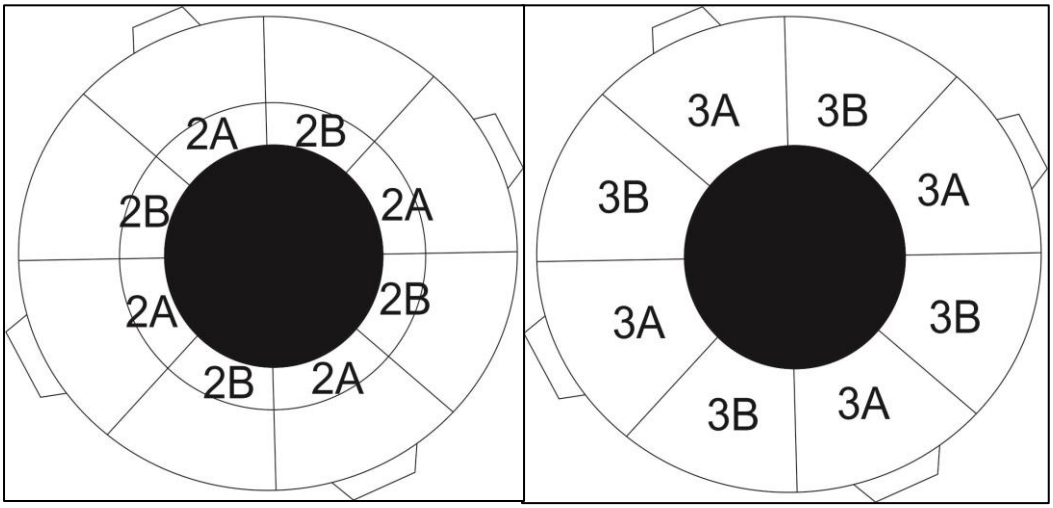


Figure 4.8. Birdseye Representation of Shoulder and Belly Zones used in the Analysis of Decorative Layout

A vessel template, as shown in Figure 4.7, was produced for each vessels examined in this study. Subzones were shaded in grey when decoration was present. When decoration was not present, the subzones were not shaded. This conceptualisation of the presence and absence of decoration allows for exploration of how a vessel was decorated to be separated from the specifics of the type of decoration with which the vessel was decorated. The spatial layout for each zone was subsequently coded as shown in Figure 4.9.

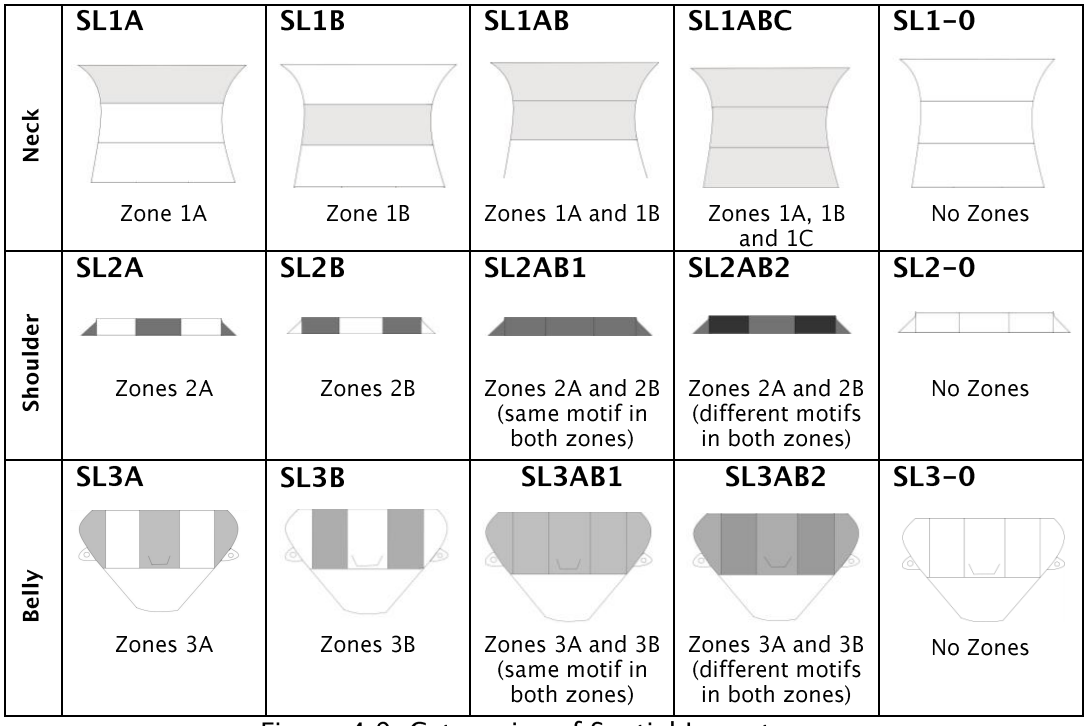


Figure 4.9. Categories of Spatial Layout

In zone 1, layout SL1A (spatial layout 1A) was categorised according to decoration placed solely in subzone 1A, SL1B is classified by decoration being present in subzone 1B, SL1AB relates to subzones 1A and 1B displaying decoration and SL1ABC corresponds to all three subzones containing decoration. SL1-0 has no neck decoration. Some vessels displayed two types of decoration in zones 2 and 3 that were characteristically different from each other, where subzones 2A or 3A contained one type of decoration, and subzones 2B or 3B displayed another. In these cases, contrasting shades of grey were used to highlight this, as shown by layouts SL2AB2 and SL3AB2 in Figure 4.8. When the decoration in either subzones 2A or 3A was the same as that placed in subzones 2B or 3B, in order to reflect this, the same shade of grey was used, as shown by layouts Sl2AB1 and SL3AB1 in Figure 4.8.

In zone 2, SL2A refers to subzones 2A displaying decoration, SL2B is classified according to the presence of decoration in subzones 2B, SL2AB1 is categorised according to the placement of motifs in subzones 2A and contrasting motifs placed

in subzones 2B. SL2-0 has no decoration. In zone 3, SL3A displays decoration in subzones 3A, SL3B has decoration in subzones 3B and SL3AB1 refers to subzones 3A and 3B displaying contrasting motifs. SL3AB2 display the same motifs in both zones 3A and 3B, and SL3-0 exhibits no decoration. These classifications and codes allow for the exploration of similarity and difference in decorative placement.

Motifs

A motif is a recurrent thematic unit of decoration that has key recognisable characteristics such as form (Plog 1980). Motifs are therefore visual anchors to which potters can adhere or from which they can deviate. It has been noted that within communities of ceramic practice a distinct repertoire of motifs is usual (Arnold 1988) and this is certainly the case for Belegiš vessels. During this analysis, a suite of motif types were identified based on the sharing of decorative elements. These were coded based on the appearance of specific attributes. Nine families of motif were identified; M1-M9. Within each family there are up to five sub variants, identified according to the ways in which the elements were composed (Figure 4.10). Variants are therefore specific articulations of a motif type. Analysis of these variables enables exploration of similarity and difference in the use of motifs.

As indicated in Figure 4.10, M1 motif is characterised as a horizontal band of decoration. M1a variant is horizontal and straight, and M1b takes a zigzag formation. M2 motifs are applied bosses. M2a variant is a small boss, M2b is a medium sized boss and M2c is characterised as a large applied boss that is usually more pointed. M3 motifs are impressed dots, with M3a characterised as small, M3b as medium in size and M3c as the largest impressed dot. M4 motif is a pseudo handle, with variant M4a being angular and M4b being curved. M5 motif is characterised by multiple parallel lines and there are three variants; M5a where lines are vertical, M5b are lines were at a diagonal down from left to right and M5c where lines show a vertical zigzag formation. Motif M6 is classified by stem(s) with curved outer edges. M6a demonstrates the outer stems' curvature at the top and M6b has the curved edges placed at the bottom of the motif. M7 motif is classed by a single stem with multiple curved offshoots. M7a is defined by upward facing offshoots and M7b is defined by downward facing offshoots. M8 is categorised as a cross. It has two variants, M8a which consists of a single cross and M8b which is a multiple cross formation. M9 is characterised as an arch and had five variants; M9a which is defined by a single arch, M9b which is a single arch with M5, M9c which is an arch with M6, M9d which is an arch with M7 and M9e which consists of an arch with M8.

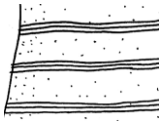
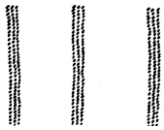
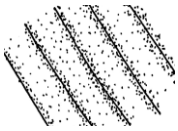
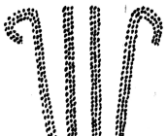
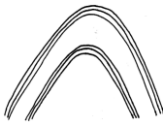
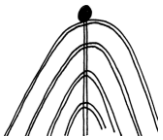
M1 – Horizontal Bands		M2 – Applied Bosses		
M1a  Horizontal Straight band	**M1b**  Horizontal Zigzag band	**M2a**  Small boss <10mm	**M2b**  Medium boss 10–15mm	**M2c**  Large boss >15mm
M3 – Dot		**M4 – Pseudo Handle**		
M3a  Medium dot <5mm	**M3b**  Large dot >5mm	**M4a**  Pseudo handle (angular)	**M4b**  Pseudo handle (rounded)	
M5 – Vertical Lines			**M6 – Multiple Stems with Curved Outer Stems**	
M5a  Vertical parallel lines	**M5b**  Diagonal parallel lines	**M5c**  Vertical Zigzag lines	**M6a**  Vertical stems curved at top	**M6b**  Vertical stems curved at top
M7 – Offshoots	**M8 – Cross**			
M7a  Single stem with multiple offshoots	**M8a**  Single Cross	**M8b**  Multiple Cross		
M9 – Arch				
M9a  Arch	**M9b**  Arch with M5a	**M9c**  Arch with M6b	**M9d**  Arch with M7a	**M9e**  Arch with M8a

Figure 4.10. Range of Motif Types on Belegiš Urns

Motif Configuration

It was noted during preliminary analysis of vessels from Surčin that motif types displayed variation in terms of the number of decorative elements present within a single type of motif. In the majority of cases the configuration was unique meaning that no two motifs of the same family were articulated in the same way. For this reason, variation in the configuration of motifs was not quantified but recorded in illustrative form. These representations are displayed and discussed in Chapter 6.

Decorative Method

Belegiš motifs were created using a range of decorative methods. For the purposes of analytical clarity, a distinction has been made between decorative methods and decorative techniques. The word 'method' is used purposefully to refer to the basic technical procedure, such as impression or incision. In contrast, the word 'technique' is used when discussing the way in which the decorative method was executed, for example the tools used. Technique therefore encompasses both manner and gesture. This is explained further below. During analysis, the frequencies of decorative methods were documented.

Decorative methods were usually executed when the clay was leather hard through one or a combination of the following: cutting, displacing and joining (Rye 1981:89) (Table 4.5). The cutting methods used to articulate Belegiš decoration include incision, faceting and fluting. Incision refers to the engraving of the leather hard surface with a sharp one-pointed tool or multi-pronged comb. Faceting is a similar method to incision, but uses a wider tool to create thicker grooves. Fluting is a cutting method that uses a blade-like tool to cut wide strips. These channels are often wider and not so impressed into the clay. For a prehistoric maker tools made out of bone, wood, stone or clay may have been used. Displacement methods utilised for Belegiš decoration consist of impressed cord, and impressed dots. Cord impressions were created by pressing strands of cord into the leather hard surface. Dot impressions refer to the use of rounded tools used to stamp the clay. Again, a range of tools may have been used including bone and sticks. Inlay is the process of incising or impressing decorative design and then in-filling it with a substance of a contrasting colour. Finally, applied decoration is a joining method that fuses a shape of clay to the vessel surface. Within prehistoric pottery assemblages this usually takes the form of applied bosses.

Incision	Cutting method. Leather-hard clay is engraved with a sharp one-pointed or multi-pointed tool (comb).
Faceting	Cutting method. Strips cut out of leather-hard clay using a wide sharp tool.
Fluting	Cutting method. Strips cut out of leather-hard clay using a tool such as a blade.
Cord Impression	Displacement method. Leather-hard clay is stamped with cord strand.
Dot Impression	Displacement method. Leather-hard clay is stamped with a sharp one-pointed tool.
Inlay	Infilling method. Leather-hard clay is impressed or incised. This is filled with another substance, such as crushed shell or bone.
Applied Decoration	Joining method. Shapes of clay attached to the vessel such as bosses.

Table 4.5. Decorative Techniques and Descriptions recorded during Analysis

Decorative Technique: Gesture

Each decorative method demonstrated diversity in the manner in which they were applied. The frequency of these differences in technique was included in analysis. Incised decoration was made with the use of one-pointed or multiple pointed combs, resulting in single, double or triple incised lines. Facetted decoration consisted of multiple lines made with a wide tool measuring 3-5mm in width. These lines were placed either directly next to each other or with a 5 to 10mm gap between them. Fluting was either thin, at 5 to 10mm in width, or thick, measuring over 10mm depending on the width of tool used. Cord impressions consisted of up to four strands of cord. Dot impressions show variation in the width of tool used; either between 3 and 5mm or over 5mm. Inlaid decoration was created with either incisions or impressions. Finally, bosses demonstrate variation in the accompaniment of impressions or incised decoration. These variables allow exploration of similarity and difference in the application of decorative methods.

Incised	**Single Incised**	Single line(s) made with one-pointed tool.
	Double Incised	Double line(s) made with two-pronged comb.
	Triple Incised	Triple line(s) made with three-pronged comb.
Facet	**Facetted**	Single lines, 3-5mm, grouped closely together.
	Facetted with gap	Single lines, 3-5mm, with gap of 5-10mm between.
Flute	**Thin Fluting**	5-10mm.
	Thick Fluting	10mm +.
Cord Impressions	**Single Cord**	One strand of cord.
	Double Cord	Two stands of cord placed together.
	Triple Cord	Three strands of cord placed together.
	Quad. Cord	Four strands of cord placed together.
	Pseudo Cord	Fake cord impressions made using another technique.
Impressed	**Medium Dot Impression**	Single or multiple dots, 3-5mm.
	Large Dot Impression	Single or multiple dots, 5mm+.
Inlay	**Inlaid/Impressed**	Stamped decoration with inlay.
	Inlaid/Incised	Incised decoration with inlay.
Applied Boss	**Applied boss**	Plain applied boss.
	Boss with impress.	Applied boss with additional impressions.
	Boss with incision	Applied boss with additional incisions.

Table 4.6. Variation in Decorative Methods recorded for Belegiš Urns

Decorative Technique: Execution

Each decorative method also displayed diversity in the ways they were executed that directly relate to gestures of the body. These were classified and the documented (Table 4.7). Different gestures were apparent for decorative methods such as incision and cord impression, demonstrated by whether a decorative method was administered with precision or unevenly. From this the categories of 'neat' and 'rough' emerged. All decorative methods show variation in the technical gestures used, characterised by either shallow or more pronounced decoration. These observations gave rise to the three dimensional categories of 'light' and 'deep' for each of the decorative methods and relate to technical gestures. These variables allow for similarity and difference in gesture to be explored. Appendix II gives photographic examples of each category as a reference guide.

Incised	**Neat Incised**	Precise incision.
	Rough Incised	Uneven incision.
	Light Incised	Shallow incision.
	Deep Incised	Pronounced incision.
Facet	**Light Facet**	Shallow facet.
	Deep Facet	Pronounced facet.
Flute	**Light Fluting**	Shallow fluting.
	Deep Fluting	Pronounced fluting.
Cord Impression	**Neat Cord**	Precision cord impression.
	Rough Cord	Uneven cord impression.
	Light Cord	Shallow cord impression.
	Deep Cord	Pronounced cord impression.
Impressd	**Light Impressed**	Shallow impression.
	Deep Impressed	Pronounced impression.

Table 4.7. Variation in Technical Gestures of Decorative Methods.

4.3.5. Surface Finish

A range of surface treatments have been identified within prehistoric pottery manufacture. These are usually applied after the vessel is decorated. Although the pilot study of vessels from Surčin demonstrated that all vessel demonstrate smooth surfaces, there are other surface textures that do not have a smooth or glossy appearance. Rustication gives a rough surface texture and is achieved by rubbing the surface with a tool such as a stick or a brush. Slips can also be used as a surface treatment, and are applied when the vessel is leather hard. These are made of smooth liquid clay. There are three degrees of smooth surface finish, all of which are variations of a similar technique: smoothing, burnishing and polishing (Table

4.5.). Once the vessel has dried to the leather-hard stage it is usually rubbed with a tool to create a smooth matte surface. Burnishing utilises the same technique but the surface is rubbed until a glossy sheen is produced (Longacre 2001). This method produces varying degrees of sheen dependant on the desired effect and the skill of the potter. Faint lines of burnish are usually evident, indicative of the direction in which the potter was working; horizontal, vertical or sometimes a combination of both. Polishing produces a more lustrous surface without lines of burnish (Rye 1981:89-90) and requires great skill and investment of energy.

Surface Treatment	Surface Texture	Technological Trace
Smoothing	Smooth and matte	Lines of smoothing.
Burnishing	Smooth with light to high sheen	Lines of burnishing.
Polishing	Silky smooth with high sheen	No lines of burnishing.
Rustication	Rough texture	Rough uneven lines often from plant impressions.
Slips	Smooth	Smooth surface and visible difference in fracture between clay body and slip.

Table 4.8. Technological Traces of Surface Treatment

Although the majority of vessels displayed original surface finishes, as a result of reconstruction and museum restoration, some vessels had been coated with a thin lacquer. This meant the original surface texture was not visible. Additionally, as is often the case with prehistoric pottery, some vessels were heavily abraded, and an original surface texture could not be distinguished. Vessels with lacquer or severe abrasion were not included in this study.

4.2.6. Firing

Vessel colour in Bronze Age pottery is achieved through both the use of different clay types and firing within different atmospheres. In addition to being a product of these technicalities, controlling vessel colour may be an intentional part of the overall crafting of a vessel, requiring great technical control. Experimental archaeology has demonstrated that vessel firing is challenging and requires great skill and procedural knowledge (Gibson 1986). Complete competency is required to ascertain the correct temperature and atmosphere. Often the colour itself has social meaning (Budden 2002, Longacre et al. 2000). Once the vessel has been given ample time to dry out, it is fired. This transformation which turns clay into ceramic requires a temperature between 500 and 800°C. Firing increases the strength and durability of the vessel as well as changing its porosity (Rye 1981:96). There are several methods for firing; open firing, pit firing and kiln firing (Sinopoli 1991:31). Archaeological evidence for open firing and pit firings is sporadic and consequently technological signatures on the vessels themselves offer the greatest evidence for shifts in pyro-technology. Within pit or bonfire firings, vessels are placed on top of

fuel such as grass, brush or dung (Sinopoli 1991:31) that has been placed into a bonfire or pit (Gibson 2002). The temperature is controlled as much as possible through fuel management (Rye 1981:98). Vessels that exhibit grey or black colour demonstrate reduced conditions which signify a reduction of oxygen during firing. These traces allow insight into different firing practices.

In this study the surface colour of vessels was analysed and placed into distinct colour categories, made consistent by use of a colour chart. These categories were: Orange/Red, Grey, Black, Brown, Pale Pink and Buff-off-White. They are based on established distinctions used for the Bronze Age ceramics at the tell site of Százhalombatta, Hungary (Budden 2007, Kreiter 2007).These systematic categories were chosen due to the fact that often there are a variety of colours on a single vessel due to irregularity in firing temperatures. For this reason is was deemed more useful to abandon traditional colour characterisations based on Munsell soil charts and instead use a smaller and more simple range of colour categories that still adequately represents colour differences.

4.4. Summary

Each of the variables described above were chosen to allow for similarity and difference within the production of Belegiš urns to be identified and explored. In the following chapters these commonalities and variations are used to elucidate tradition, practice and creativity as aspects of manufacture.

Chapter 5
Tradition
Data Presentation and Discussion

This thesis is an attempt to unpick the commonalities that run through the Belegiš phenomenon whilst simultaneously elucidating and exploring the differences between vessels within the assemblage studied. In order to maintain conceptual clarity, the data collected by the methods described in Chapter 4 are presented and discussed in three separate chapters relating to the analytical axes set out in Chapter two: tradition, practice and creativity. This enables pinpointed access to the variables that illuminate each of these three axes of enquiry and therefore allows for a targeted discussion of each concept.

It has been proposed that tradition represents the largest scale of interpretation, offering insight into overarching similarities across sites and over time. In this way tradition can be used as a conceptual tool to explore aspects of cohesiveness that run through the Belegiš phenomenon. As discussed in Chapter two, traditions are long-standing beliefs and customs (Ingold and Hallam 2007:9). In the context of production, a tradition represents an established method of manufacture where the maker draws upon a bank of technological knowledge (Glassie 1995). Consequently, tradition represents a set of technological principles but also the broader social structure of knowledge in which it takes place. It can therefore be thought of as a template for social behaviour (Hallam and Ingold 2009). Tradition, as a social structure, can be signalled by stability and temporal continuity in technological behaviour.

As has previously been discussed, Belegiš I and II groups are not only two typological categories but also represent two chronological stages of Belegiš manufacture, with Belegiš I being earlier and Belegiš II urns representing vessels that are later in date. Despite the fact that for many of the vessels there is a lack of contextual data, the distinction between Belegiš I and II can be used to explore the Belegiš as a phenomenon that was both continuous and demonstrates change over time. For this reason, data for Belegiš I and II vessels are presented separately. These groups were distinguished by the author on the basis of the characteristics outlined in chapter 3. This was to maintain consistency in groups across the sites.

The sample sizes vary for each site. This is partly due to the availability of vessels for analysis and also the number of vessels that were uncovered during excavations. This means that for sites such as Ilandža and Tolvadia there are comparatively low sample sizes and so it is unknown how representative these samples are.

Nonetheless, the inclusion of this data allows for the Belegiš phenomenon to be explored regionally.

5.1. Data Presentation

The exploration of tradition is rooted in identifying the similarities that run through the dataset. This requires consideration of manufacture across the region and so the data within this section is presented in stacked bar graphs in order to specifically demonstrate commonalities in manufacture *across* sites. This allows for consistencies across the whole of the study area to be demonstrated. This shows the percentages of each variable. The number frequency for each variable can be found in contingency tables in Appendix II. In order to investigate the development of tradition, as has been previously noted, distinctions between Belegiš I and Belegiš II vessel groups are made. This promotes an evaluation of the existing divide between Belegiš I and II by investigating what is *constant* throughout the entire span of Belegiš manufacture. From this uncovering of what is at the heart of Belegiš tradition, an understanding of how the tradition changed can also emerge. In order to aid this investigation of the relationship between stability and change, where appropriate the data was also analysed using Pearson's Chi Square test ($p \leq 0.05$). This was only possible for a small number of variables as in order for a chi square test to be performed over 80% of the categories must have a frequency over 5 (Fletcher and Lock 1991:119). Due to the variation in sample sizes between sites and therefore the fragmentation of the data, the use of this statistical test was not always possible. However, when conducted it enabled an exploration of differences between the frequencies of variables between Belegiš I and II. The pearson numbers (P numbers) that show significant differences are highlighted in **bold*** within the contingency tables. Where it was not possible to include a Chi Square test, pie charts of frequencies are used to show trends over time.

Examination of the data through the lens of tradition proved challenging in terms of pinpointing exactly what constitutes the Belegiš tradition. Yet amidst the complexity of the data, there are trends and tendencies in manufacture that run throughout the entire dataset that stand out. These are presented below. The variables through which the Belegiš tradition is explored are: vessel fabrics, formation techniques, morphology, vessel shape, the spatial layout of decoration, motif types, decorative techniques, surface finishes, and firing conditions.

5.1.1 Clay Preparation

Petrological analysis revealed that vessels across the region of Vojvodina were made from very similar silt clays. These are fine and contained moderate to common silt sized quartz that is sub rounded and therefore natural to the clay. It is highly likely that the vessels were made within the region. Although surrounding areas have

pockets of limestone with calcareous clays, almost the entire region of Vojvodina is made up of alluvial deposits. These comprise silt, clay, sand and larger pieces of quartz (Dević et al. 2012:184). There is very slight variability in the clay which occurs in the form of the concentration and size of quartz. This can mostly be attributed to the use of different clay deposits (Arnold 1985). Despite this, due to the fact that the clays contain the same types of inclusions, the exact location of the clay deposits used for Belegiš urns cannot be ascertained. Instead, it is only possible to demonstrate that the clay would have been acquired somewhere within the region of Vojvodina.

Fabric Descriptions

During analysis four main fabric groups were identified. A discussion of these fabrics however is limited to the sites of Ilandža, Stubarlija, Surčin, Vatin and Vršac – Stari Ludoš. The publications of vessels from Belegiš – Stojića Gumno, Kaluđerske Livade and Karaburma did not contain descriptions of fabric. The following section provides descriptions of these fabrics. All of them demonstrate the incorporation of grog as temper although the amount and size of the grog varies. The fabric series described below therefore rests heavily on the characterisation of this addition of grog.

Gr1 (Grog1)

This fabric consists of a very fine clay matrix with sparse flecks of muscovite mica. Petrological analysis revealed that the clay contained natural silt-size sub rounded quartz in common amounts, as well as occasional small sub angular quartz that was again natural to the clay. Added temper consists of moderate to common amounts of angular grog. This is moderately to well sorted and is 0.6-1mm in size. There is occasionally smaller silt size grog and rare larger pieces of quartzite.

Gr2 (Grog2)

A variation of fabric Gr4, this consists of coarser clay that in addition to common silt sized sub rounded quartz contains sparse small sized sub angular quartz. These are natural to the clay. Added temper is sparse to common amounts of angular grog that is moderately to poorly-sorted, and usually 0.6-2mm in size.

Gr3 (Grog3)

This has a grittier clay matrix than Gr 1 and Gr2, many examples with rare to sparse scatters of silt-sized subangular quartz. Common to moderate amounts of angular grog, 1-2mm in size. Petrological analysis demonstrated grog within larger pieces of grog, indicating the ongoing recycling of ceramics within pottery manufacture (Gibson and Woods 1997).

Gr4 (Grog4)

This is a variation of fabric Gr2, and is fine clay containing silt-sized sub angular quartz, and a moderate to common scatter of grog that is angular in shape. This grog is 1-2mm in size with rare pieces that measure up to 3mm. One sample from Surčin demonstrated the incorporation of grog within grog.

Frequency of Fabrics

As has been previously discussed in Chapter 4, many of the Belegiš urns included in analysis were reconstructed meaning that it was not permissible for samples to be taken. Samples were only taken from vessels where minimal damage to the vessel would occur. Therefore in contrast to the number of vessels included in overall analysis, the sample offered for fabric analysis is comparatively small. Although the sample is small, it still offers access to analysis of the clay and temper. Given the fact that there appears to be only slight variability in both the clay type and the type of temper used, it can be suggested that the sample is likely to be representative of the assemblage in terms of the range of fabrics. The graphs below present the percentage frequencies of Belegiš I and II fabrics both within and across sites. Absolute numbers are in parentheses.

Belegiš I (Figure 5.1)

The graph below demonstrates that at the site of Ilandža, Surčin and Vršac- Stari Ludos, more than 50% of the vessels analysed have Gr1 fabrics, indicative of a shared preferred method of clay preparation. The second highest fabric type is Gr2, particularly at Ilandža, Stubarlija and Vršac – Stari Ludos. The data presented here shows that although frequencies of fabric vary across the sites, they all demonstrate the use of grog.

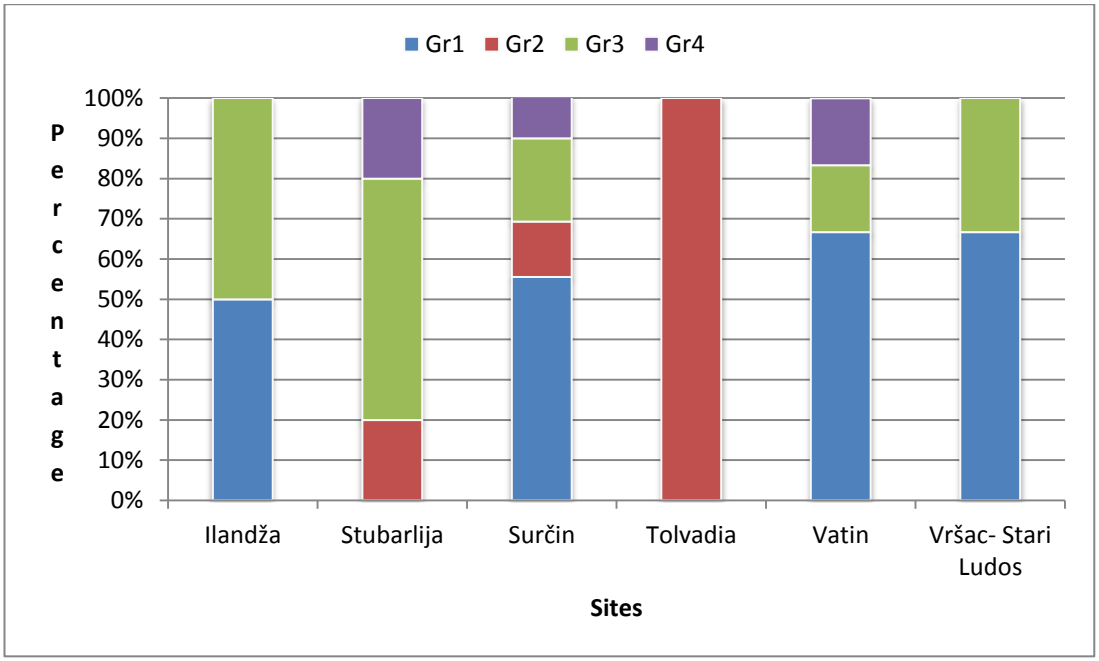


Figure 5.1. Percentage Frequency of Belegiš I Fabric Types

Belegiš II (Figure 5.2)

The graph below demonstrates that across the sites, Gr2 and Gr3 fabrics show more prominence.

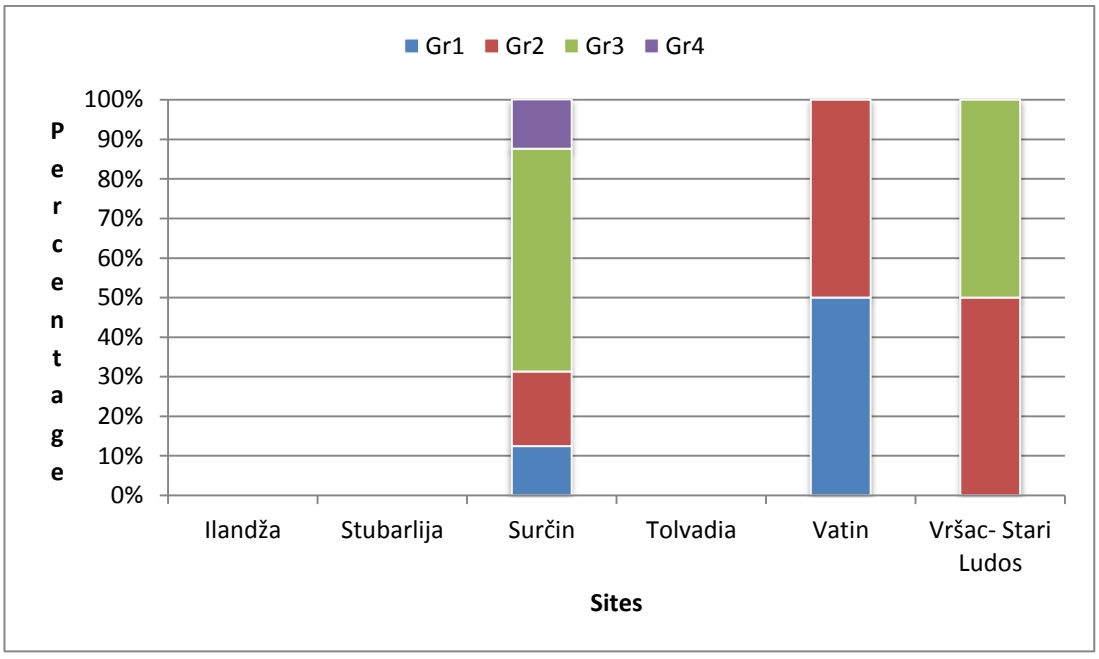


Figure 5.2. Percentage Frequency of Belegiš II Fabric Types

Observed Frequency					
	Gr1	**Gr2**	**Gr3**	**Gr4**	**Total**
Belegiš I	22	6	12	5	**45**
Belegiš II	3	5	10	2	**20**
Expected Frequency					
Belegiš I	17.308	7.615	15.231	4.846	**45**
Belegiš II	7.692	3.385	6.770	2.154	**20**
Total	**25**	**11**	**22**	**7**	**65**
X^2=7.491 df = 3 p = 0.058					

Table 5.1. Pearson Chi-Squared Test showing difference between Belegiš I and Belegiš II fabrics

It is clear from Figures 5.1 and 5.2 that a fundamental commonality that runs through the entire assemblage is the use of grog as temper. The fact that there are only four fabric types demonstrates only a small amount of variation in the ways in which the material was worked with. Table 5.1 shows that there is no significant difference between the frequencies of fabric type between Belegiš I and Belegiš II (X^2 = 7.491; p≥ 0.058). This indicates that fabrics were similar throughout the span of Belegiš manufacture, showing longevity in technological choices.

5. 1. 2 Vessel Formation and Morphology

The techniques used to build the vessels were examined on vessels from the sites of Ilandža, Stubarlija, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš, where first hand analysis could be conducted. Analysis of vessel shape is, however, included for all sites as it was possible to consult illustrations within publications in order to ascertain vessel shape attributes.

Vessel Building Techniques

Examination revealed that each vessel analysed was formed using the same suite of methods. Technological traces highlight that Belegiš necks were made from coil building techniques, where thick coils of clay were placed one on top of the other to create the neck shape. They were then smoothed to create the look of seamless joins. This left a slightly irregular wall thickness; when smoothing a hand over the surface, slight coil like bumps can be felt. The lower sections of vessels were fashioned out of smooth rolled out slabs. This is indicated by an even wall thickness and is a technique that has been noted for Middle Bronze Age ceramic vessels from Hungary; ceramic vessels from the site of Százhalombatta display comparable technological traces (Kreiter 2007). This means that these methods were not necessarily exclusive to Belegiš and that Belegiš manufacture sat within a wider network of technological knowledge. This is discussed in greater depth in section

5.2.3. The combination of coil and slab-building was used for each vessel in the dataset, regardless of the site and whether the vessel was Belegiš I or II. Over the span of 400 years, this technique therefore remained a core feature of Belegiš urn manufacture and consequently can be argued to be at the heart of what can be termed as Belegiš tradition.

Vessel Morphology

Despite the consistent use of these formation techniques, variation occurs in vessel shape. Within the data two predominant categories of body morphology emerge; bipartite and tripartite, meaning that they were fashioned out of two or three joined parts. This is signalled by the overall shape of the vessel and visible lines of fracture along the join (Figures 5.3a and 5.3b). Below is a description and graphical representation of the data that demonstrates this.



Figures 5.3a and 5.3b. Examples of bipartite and tripartite vessels from Surčin.

Belegiš I (Figures 5.4a and 5.4b)

It is clear from the graphs below that the majority of Belegiš I vessels were tripartite in form. The exception to this is at Ilandža, where one vessel within the Belegiš I sample is bipartite, and at Vatin where out of 18 Belegiš I vessels, one is quadripartite.

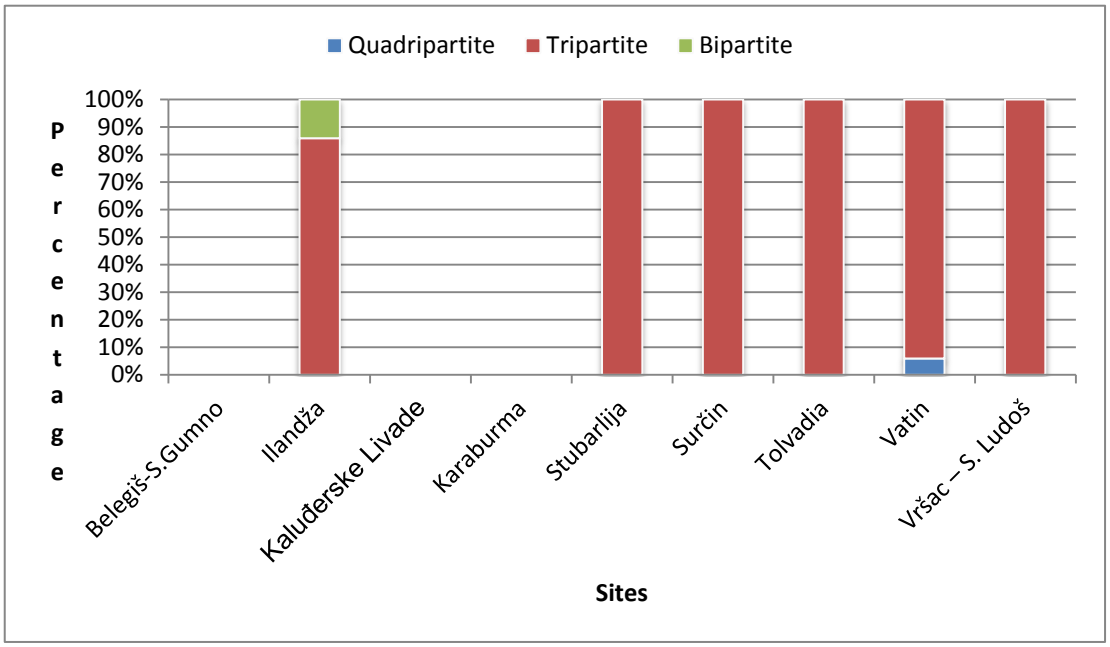


Figure 5.4a. Percentage Frequency of Belegiš I Vessel Morphology Types

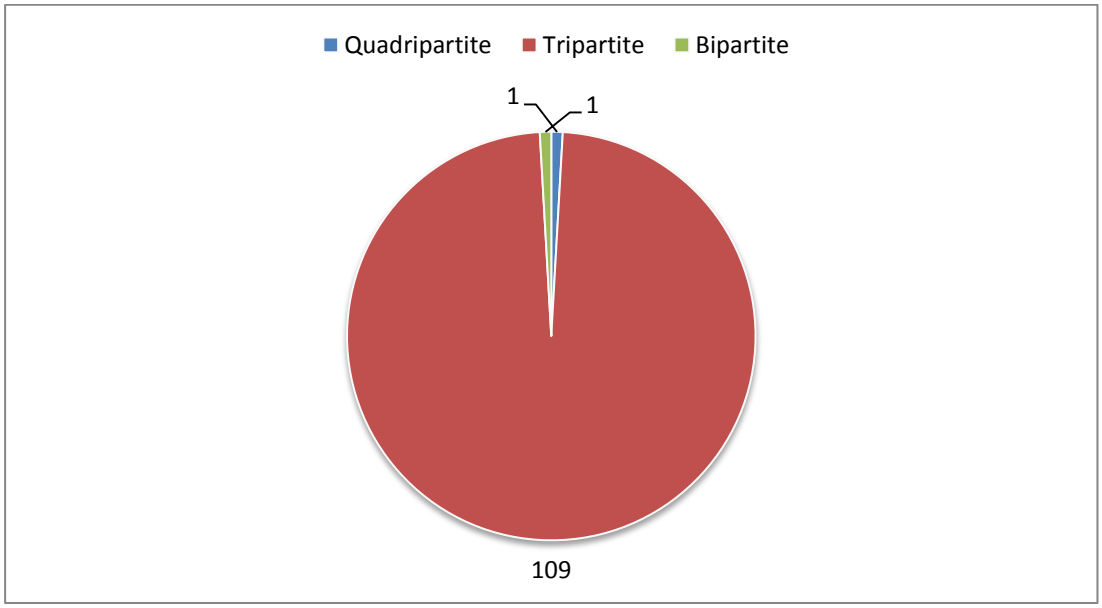


Figure 5.4b. Frequency of Total Belegiš I Morphologies

Belegiš II (Figures 5.5a and 5.6b)

In contrast, bipartite formations are more prominent for Belegiš II vessels. As shown in figure 5.5a, 35 Belegiš II vessels in total have bipartite formations in comparison to the 15 that demonstrate tripartite morphologies. This highlights that a shift in preferences occurs between Belegiš I and II.

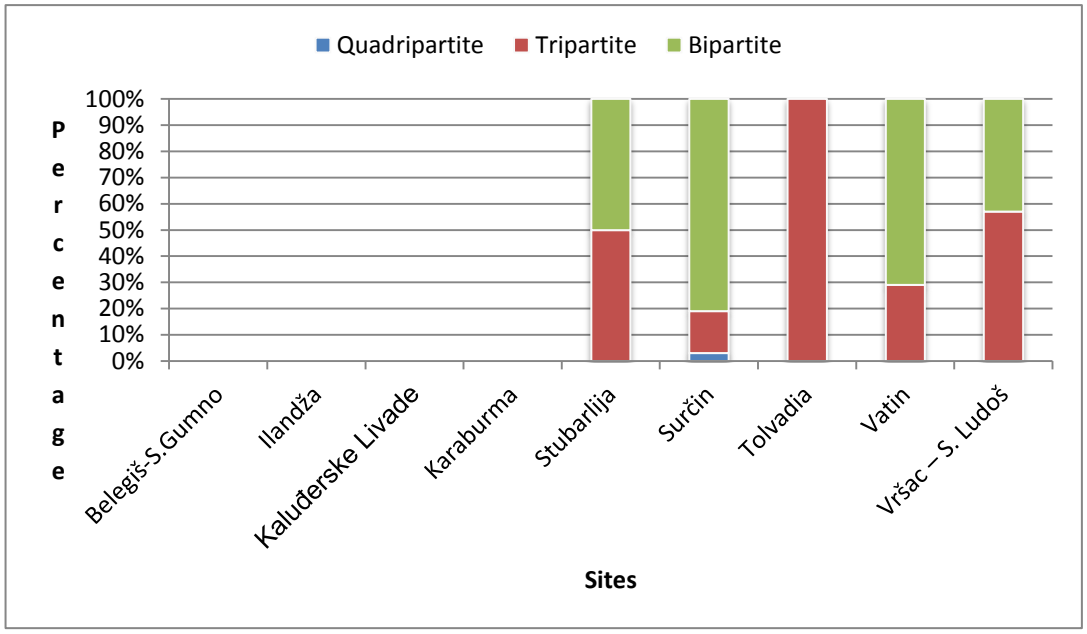


Figure 5.5a Percentage Frequency of Belegiš II Vessel Morphology Types

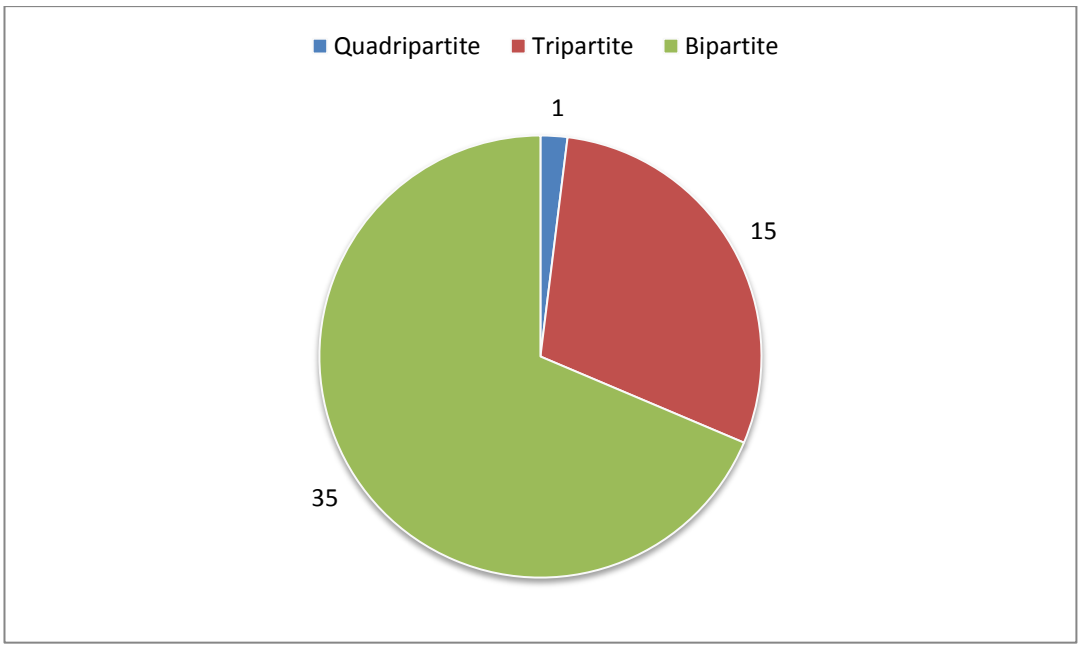


Figure 5.5b. Frequency of Total Belegiš II Morphologies

The data above demonstrates that Belegiš I urns and Belegiš II share a similar range in morphology shapes, although some of these categories only have one vessel. Through the lens of tradition we can see that the technique of creating a vessel out of three parts continues throughout the span of Belegiš manufacture, yet doesn't underpin the crafting of every single vessel. The principle of preforming separate vessel parts however was at the core of the practice of Belegiš forming and

continues throughout Belegiš I and II, although creating bipartite forms was more popular for Belegiš II.

As is discussed below, the analysis of rim, neck, shoulder, belly and handle shapes brought to light a limited range of shape attributes shared across the study region.

Rim Type

Belegiš rims are all everted in shape and were made using two techniques, either shaving the rim with a sharp tool to create a straight edge for rims R1 and R2 or rolling the rim to create a rounded edge for rim types R3 and R4. Within these two techniques, the data shows variation in the final rim shape, as is described below.

Belegiš I (Figure 5.6)

The publications of material from Belegiš- Stojića Gumno did not present rim profiles and therefore rim formations could not be ascertained. Figure 5.6 shows that across all of the sites there was a similar range of rim types with a similar distribution in frequency. In the case of Ilandža, Kaluđerske Livade, Karaburma, Tolvadia and Vršac – Stari Ludoš, R1 type is the dominant rim type. The site of Stubarlija stands out as an anomaly for the presence of one vessel displaying an R4 type rim, which is straight and rolled.



Figure 5.6 Percentage Frequency of Rim Types for Belegiš I vessels

Belegiš II (Figure 5.7)

Figure 5.7 demonstrates that Belegiš II vessels do not display the same range of rims across sites. The creation of R1 rims is still prominent at the sites of Toldavia

and Vršac – Stari Ludos, yet doesn't appear at Kaluđerski Livade and Stubarlija, and in a smaller frequency at Karaburma and Surčin. Instead, R2 is the rim type with the highest frequency, indicating there was an increased preference for fully everted rims.

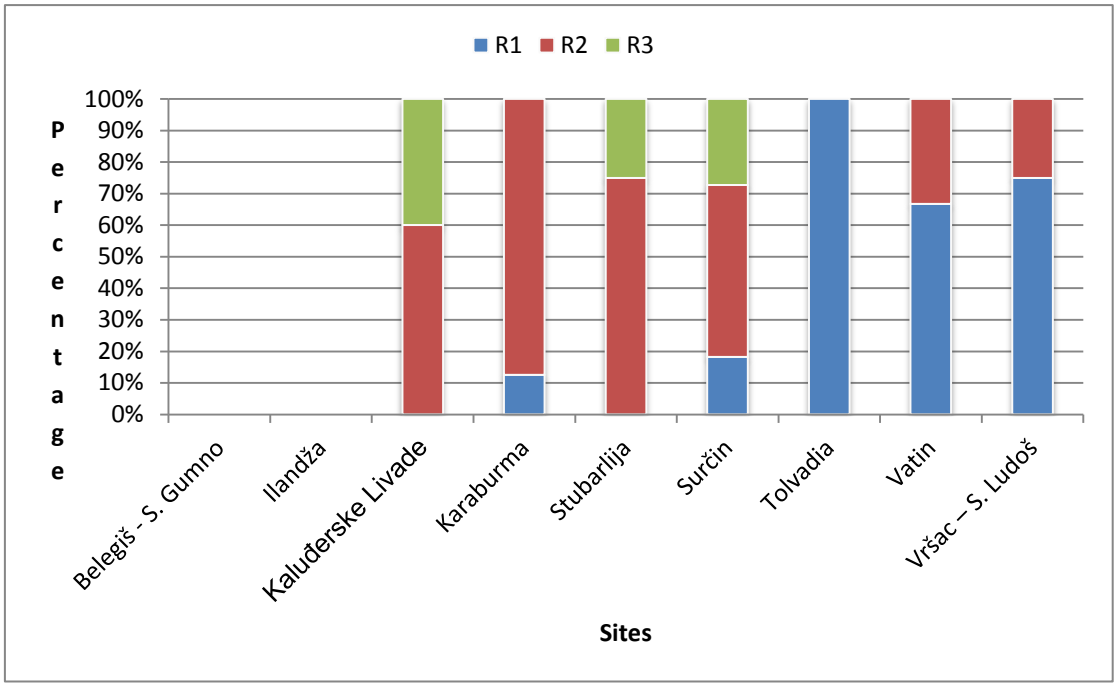


Figure 5.7. Percentage Frequency of Rim Types for Belegiš II vessels

Observed Frequency					
Rim Type	**R1**	**R2**	**R3**	**R4**	**Total**
Belegiš I	64	48	10	3	**125**
Belegiš II	10	28	6	0	**44**
Expected Frequency					
Belegiš I	54.733	56.213	11.834	2.219	**125**
Belegiš II	19.266	19.787	4.166	0.781	**44**
Total	**74**	**76**	**16**	**3**	**169**
$X^2 = 12.782$ df=3 **p = 0.005***					

Table 5.2. Pearson Chi-Squared Test showing difference between Belegiš I and Belegiš II rims

Table 5.2 backs up this claim, showing that there is a significant difference between the frequencies of rim types between Belegiš I and II ($X^2 = 12.782$; $p \geq 0.005$). This highlights that certain rim shapes, such as R2 as shown in Figure 5.7, became more prominent over time. However, the techniques used to make them stayed the same, highlighting longevity in forming practices, even though the outcome is somewhat different.

Neck Type

Analysis of technological traces demonstrated that all Belegiš vessels were made from coils that were joined and then smoothed together. There are however variations in neck shape between Belegiš I and II, as shown below. Types N1 and N2 are cylindrical shapes and types N3 and N4 are more tapered in shape. Neck shape percentage frequencies differ between Belegiš I and Belegiš II, as indicated below.

Belegiš I (figures 5.8a and 5.8b)

The data presented in figure 5.8a shows a complicated picture of neck type frequencies. N1 and N2 types appear on all sites. N3 type appears in a comparatively smaller frequency on five of the nine sites. N4 is unique to Kaluđerski Livade and N5 only appears at Stubarlija. The full range of neck types does not appear on at each site, indicative of different preferences at different sites. When grouped together, figure 5.8b highlights that just over half of the neck types conform to N1, with N2 being the neck type with the second highest frequency.

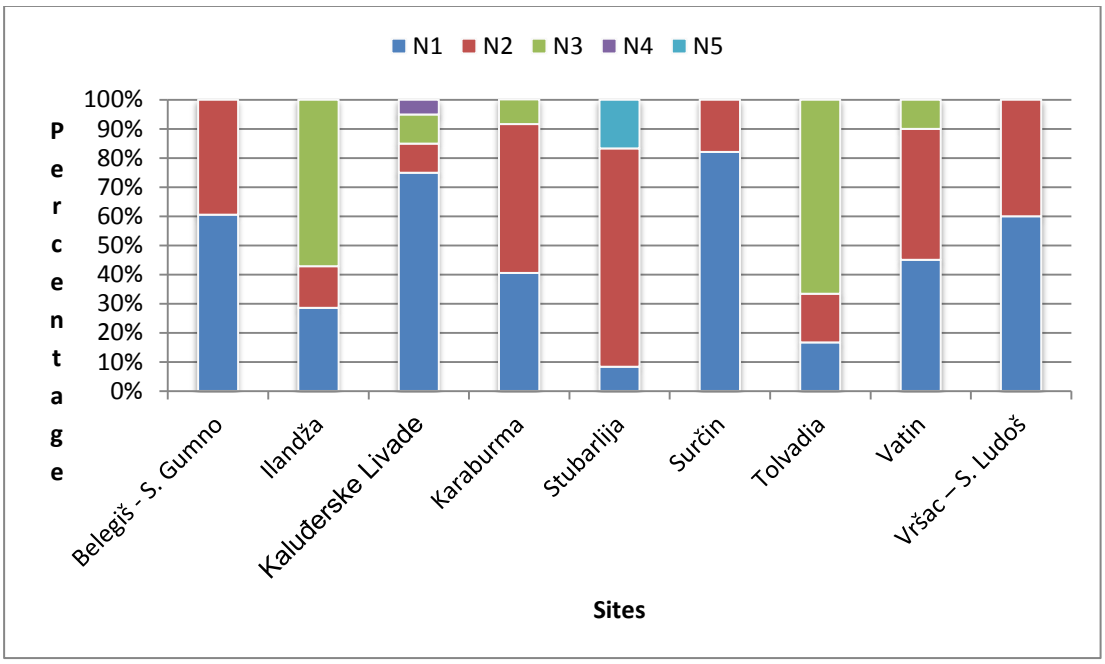


Figure 5.8a. Percentage Frequency of Neck Types for Belegiš I Vessels

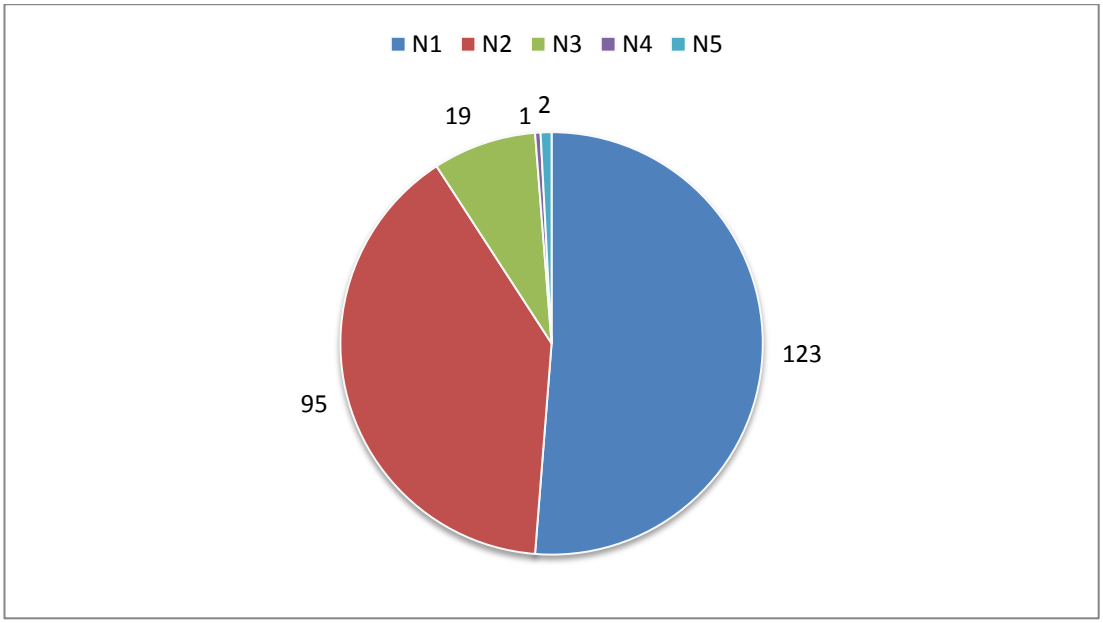


Figure 5.8b. Frequency of Total Belegiš I Neck Types

Belegiš II (Figures 5.9a and 5.9b)

Figure 5.9a shows that N2 neck type occurs at all of the sites. N3 and N4 types appear at all but one of the sites. The full range of neck types (N1 to N4) only appears at Kaluđerske Livade, Karaburma, Surčin and Vršac – Stari Ludoš, once again highlighting that different sites demonstrate different preferences. In comparison to Belegiš I, figure 5.9b shows that the highest frequency for Belegiš II vessels is N3 neck type, a neck shape that is thick in comparison to the belly, and is slightly tapered. The second highest frequency across sites is N4 neck type, which is thick and fully tapered. Only 5 Belegiš II vessels in total have N1 necks, in comparison to the high frequency of 123 in the Belegiš I group. This shows a shift in shape preference over time.

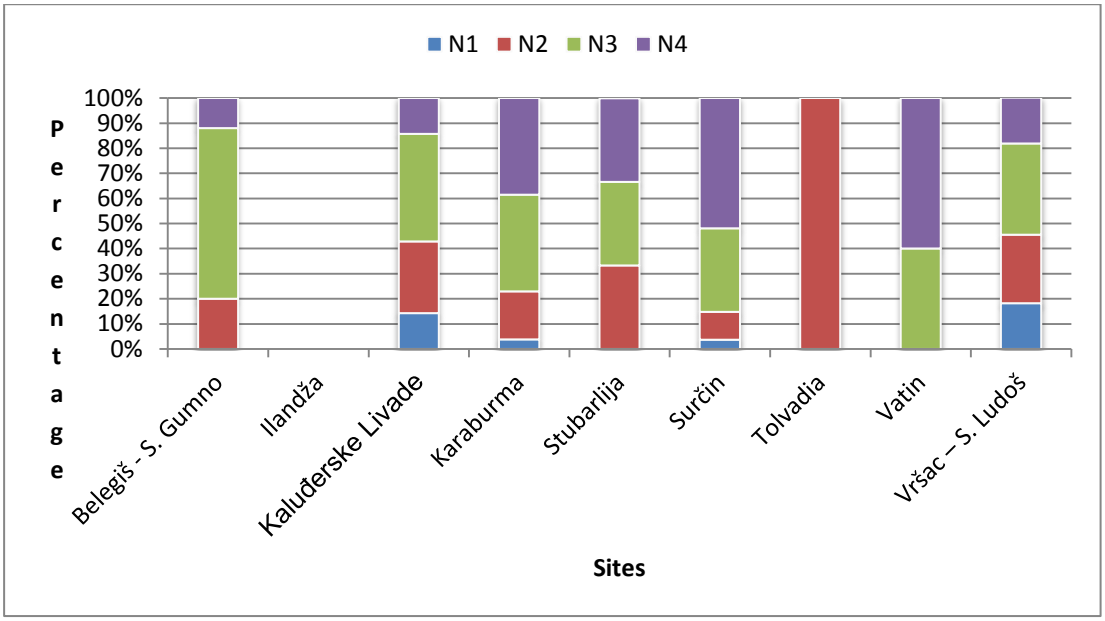


Figure 5.9a. Percentage Frequency of Neck Types for Belegiš II Vessels

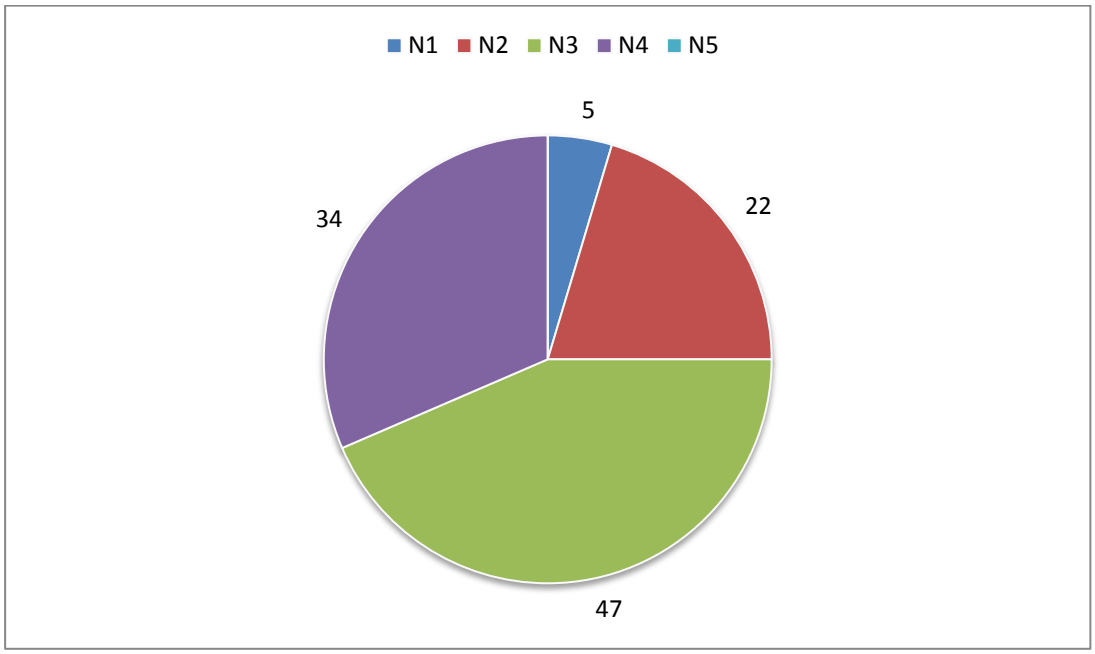


Figure 5.9b. Frequency of Total Belegiš II Neck Types

The figures above show that Belegiš urns demonstrate a range of neck shapes and that there is overlap in this range between Belegiš I and II. The frequency of these types however changes between Belegiš I and II. N1 and N2 neck types are cylindrical necks. There are higher frequencies of these necks types for Belegiš I. In contrast, Belegiš II urns display higher frequencies of tapered neck types N3 and N4.

Neck to Shoulder Join

Belegiš I (Figures 5.10a and 5.10b)

Figure 5.10a demonstrates that both NS1 and NS2 neck to shoulder distinctions appear across all sites in the Belegiš I group. As is shown in figure 5.10b, the overall dominant type is NS1; 204 Belegiš I vessels display this shoulder type in comparison to only 48 that display NS2 shoulder distinctions. This highlights a clear preference across all the sites for distinct neck to shoulder joins.

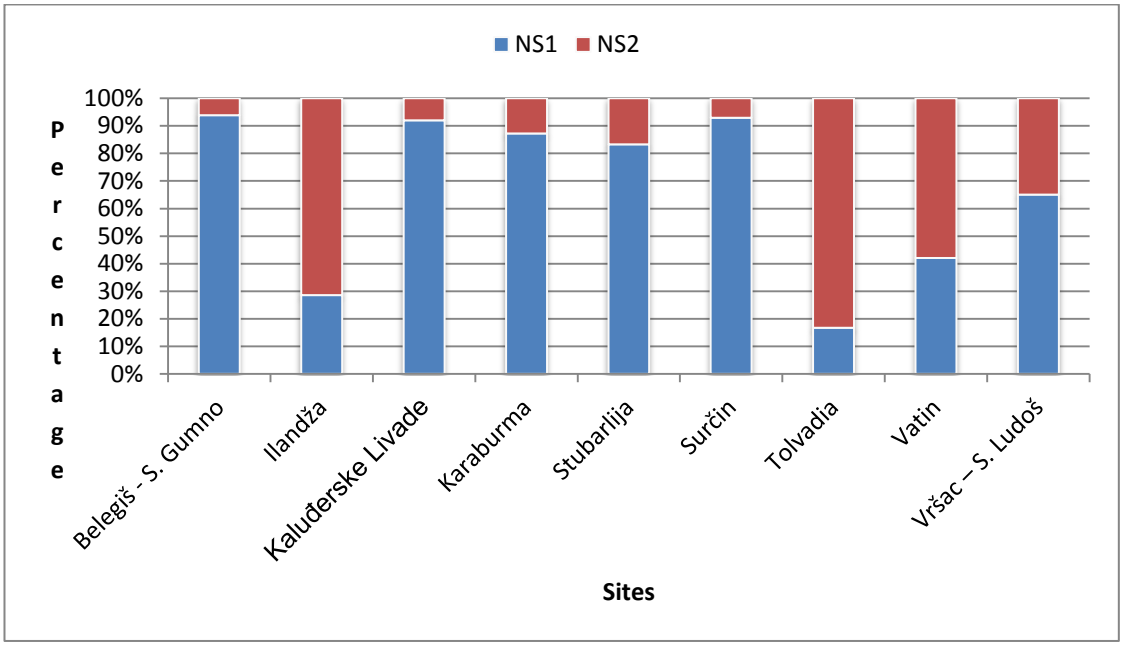


Figure 5.10a. Percentage Frequency of Neck/ Shoulder Types for Belegiš I Vessels

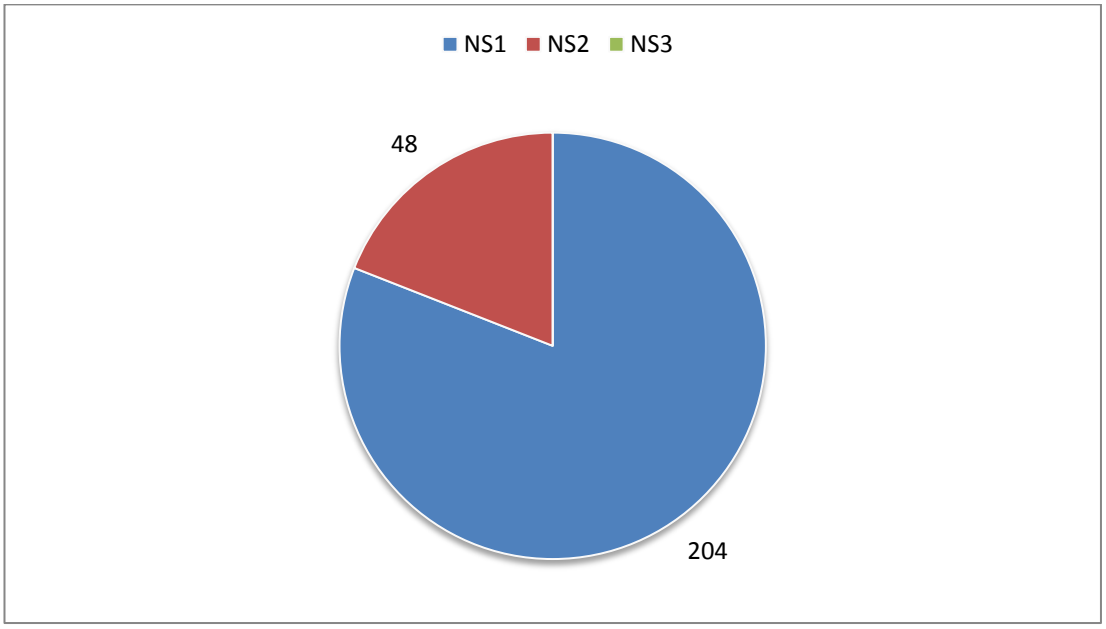


Figure 5.10b. Frequency of Total Belegiš I Neck to Shoulder Joins

Belegiš II (figures 5.11a and 5.11b)

In complete contrast, NS1 loses its dominance in the Belegiš II group and a third neck to shoulder type appears; N3. As figure 5.11a shows, the range of types therefore increases at the sites of Belegiš – Stojića Gumno, Karaburma and Surčin. Yet NS1 does not appear for Belegiš II vessels from Kaluđerski Livade, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludos. Figure 5.11b demonstrates that the highest frequency of neck to shoulder types for Belegiš II vessels within the whole assemblage is NS2.

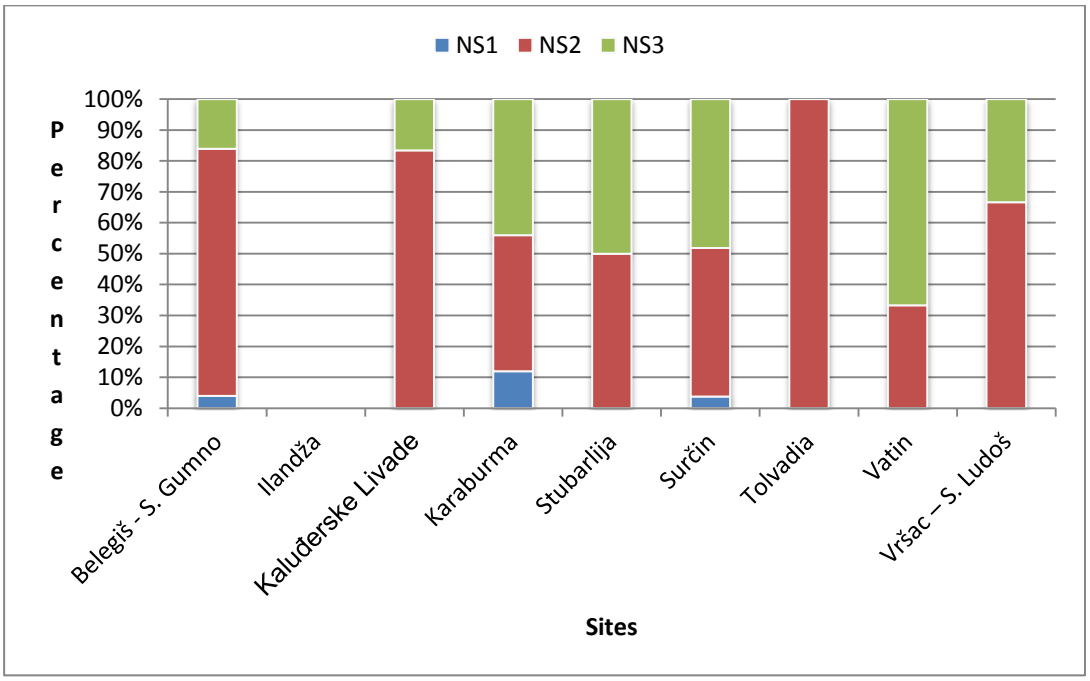


Figure 5.11a. Percentage Frequency of Neck/ Shoulder Types for Belegiš II Vessels

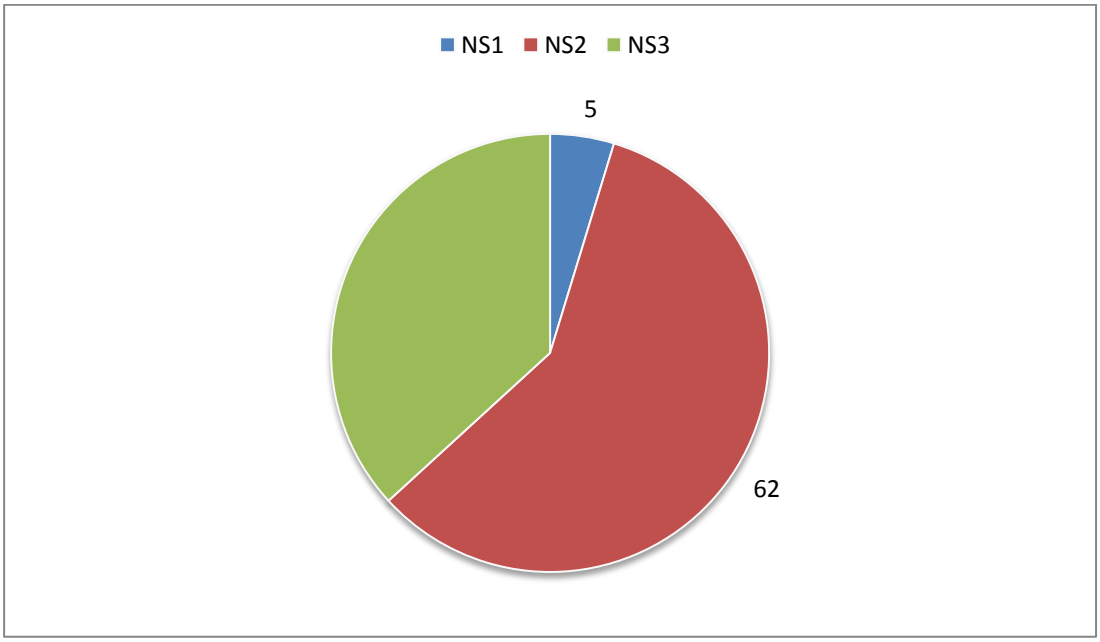


Figure 5.11b. Frequency of Total Belegiš II Neck to Shoulder Joins

The figures above demonstrate a continuation in NS1 (distinct) and NS2 (semi-distinct) neck to shoulder joins from Belegiš I to Belegiš II. Merged neck to shoulder joins, NS3, only emerge within the Belegiš II group, showing a shift in range and therefore a move towards different vessel shapes.

Handle Type

A key feature of all Belegiš vessels is the placement of handles and lugs. Each vessel analysed displays the placement of handles (types H1 and H2) or lugs (H3 and H4) on the widest part of the vessel belly at 90 degree intervals. As described below, there are variations in the type of handles and lugs manufactured between Belegiš I and II type urns.

Belegiš I (Figures 5.12a and 5.12b)

Figure 5.12a demonstrates that on the whole, only H1 and H2 handles feature on Belegiš I vessels. The exception to this is the site of Karaburma, where H3 (a type of lug) appears on two vessels, and H4 (another type of lug) appears on one vessel. Figure 5.12b highlights that for the entire group of Belegiš I vessels analysed, H2 type handles is only slightly more dominant, with a frequency of 113 in comparison to 110 for H2 handles.

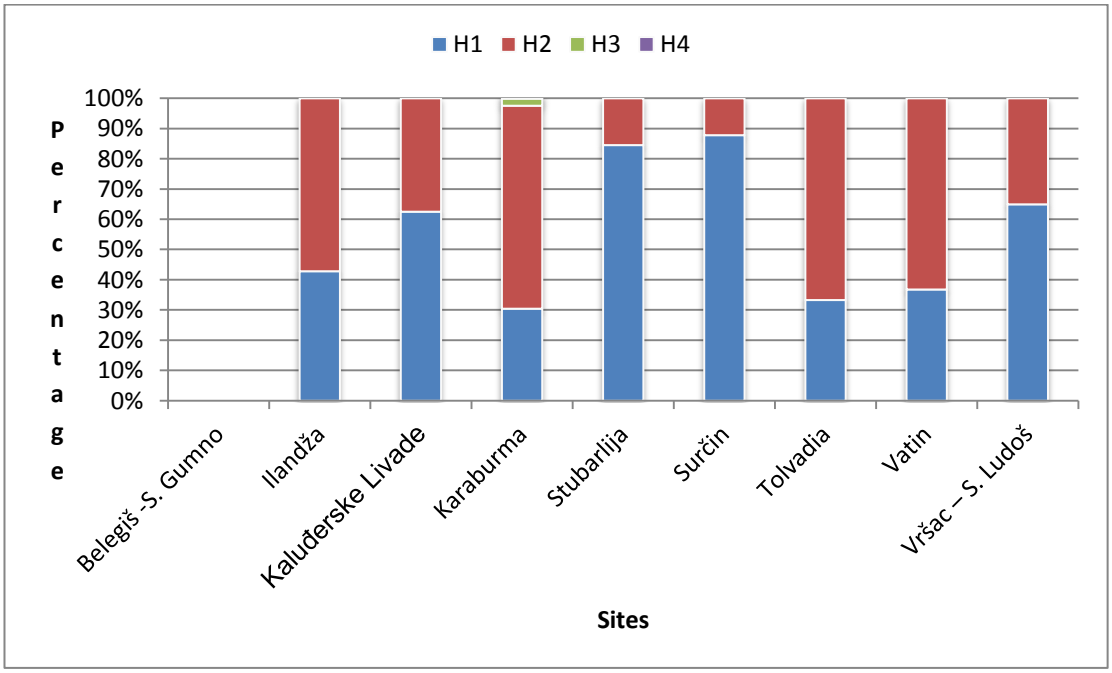


Figure 5.12a. Percentage Frequency of Handle Types for Belegiš I Vessels

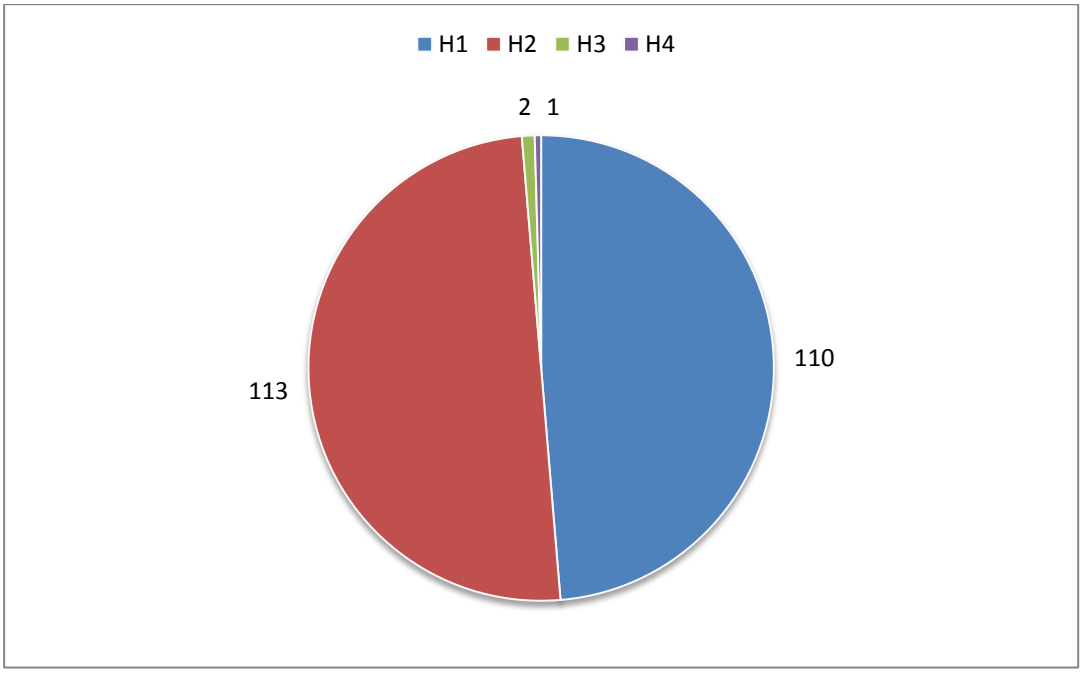


Figure 5.12b. Frequency of Total Belegiš I Handles

Belegiš II (Figures 5.13a and 5.13b)

Figures 5.13a and 5.13b show an entirely different picture for Belegiš II vessels. H2 and H3 type handles appear on all sites except Kaluđerski Livade. H4 handles appear on Belegiš II vessels from Kaluđerski Livade, Karaburma, Surčin and Vatin. The range of handles therefore increases for the sites of Karaburma, Surčin and Vatin. In figure 5.13b, it is apparent that the dominant handle type is H3 for Belegiš II vessels, a handle type that only features on two Belegiš I vessels, and is therefore likely to be introduced for Belegiš II vessels.

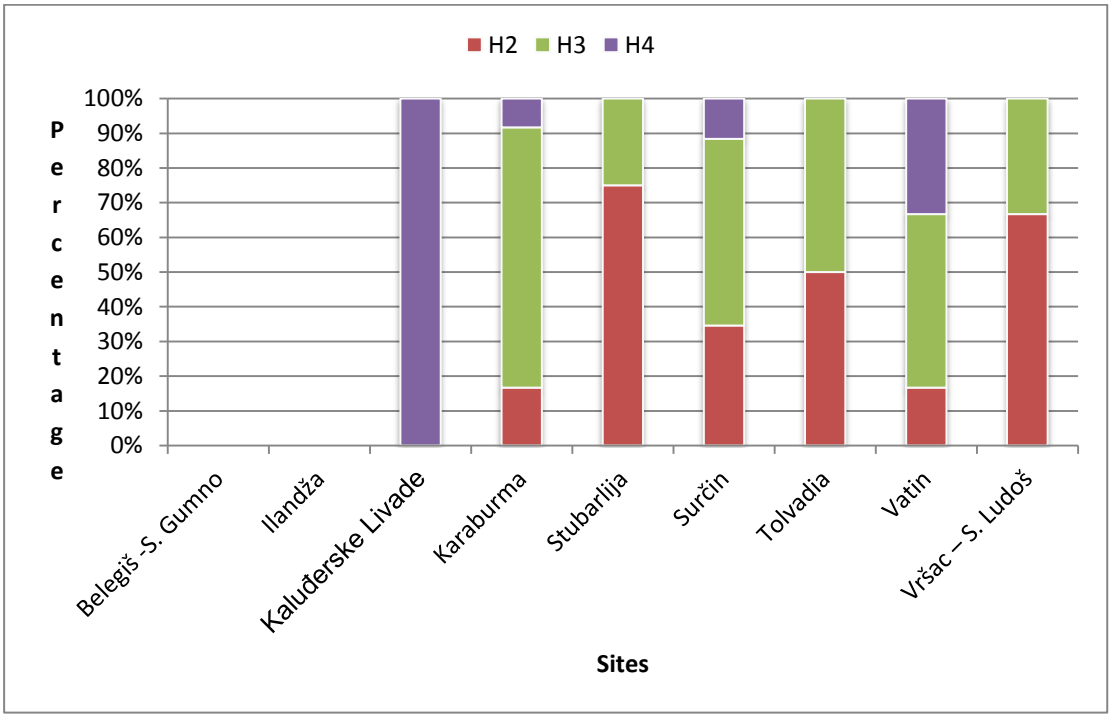


Figure 5.13a. Percentage Frequency of Handle Types for Belegiš II Vessels

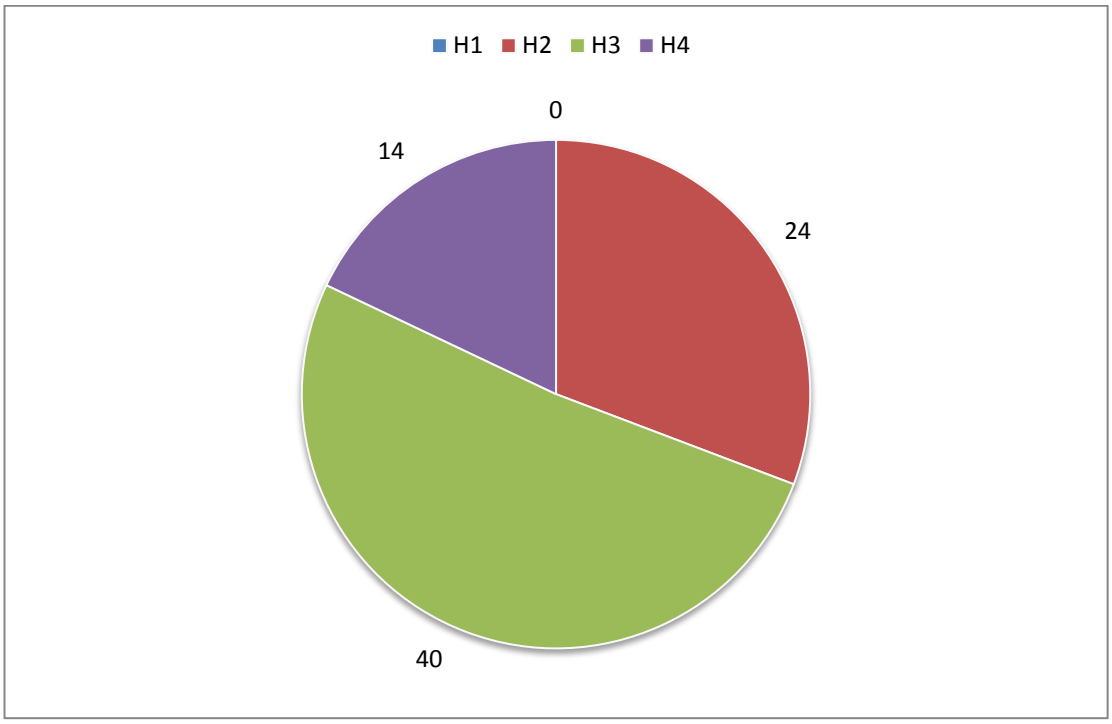


Figure 5.13b. Frequency of Total Belegiš II Handles

Belegiš I vessels display tunnel handles. The repertoire of choices was larger for Belegiš II vessels; vessels display either tunnel handles or lugs demonstrating a shift in preference. Non-pinched tunnel handles (H1) do not make an appearance in Belegiš II urn manufacture. The use of lugs is a key Belegiš II trait, yet the use of pinched tunnel (H2) handles highlights overlap in manufacturing techniques between Belegiš I and II. Despite this variation, at the core of all Belegiš manufacture was the placement of handles at 90 degree intervals on the vessel belly and this underpinning practice can be conceptualised as a thread that runs through the entire Belegiš assemblage. As will be investigated further in section 5.1.4, the placement of handles guides another fundamental commonality that runs through the assemblage; the layout of decoration.

Belly Type

As was explained in Chapter four, Belegiš vessels have belly shapes that conform to one of three categories; fully rounded (B1), semi rounded (B2) or angular (B3). The percentage frequencies of these are given below.

Belegiš I (Figure 5.14)

As figure 5.14 shows, for Belegiš I vessels bellies B1 and B2 appear on all sites. B3 however only appears at Belegiš – Stojića Gumno, Surčin, Tolvadia, Vatin and Vršac –

Stari Ludoš, and at comparatively low frequencies. The full range of belly types does not appear on all sites for Belegiš I vessels.

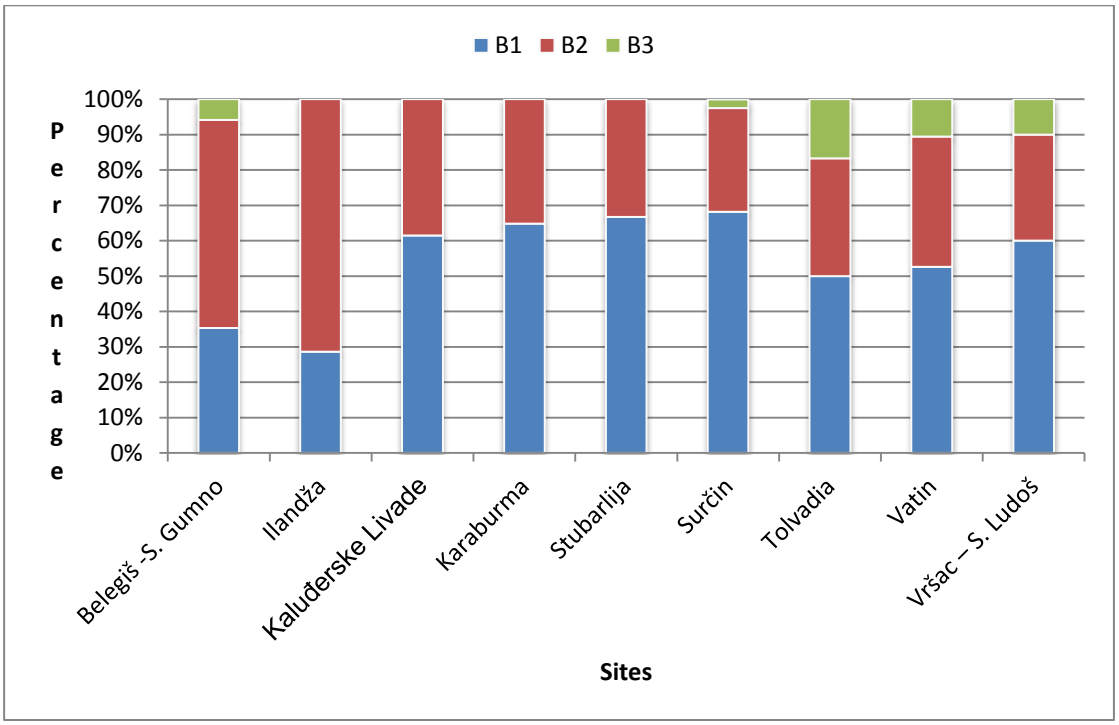


Figure 5.14. Percentage Frequency of Belly Types for Belegiš I Vessels

Belegiš II (Figure 5.15)

For Belegiš II vessels, as figure 5.15 shows, belly type B3 has a higher frequency than is the case for Belegiš I vessels and appears on all but one of the sites. Overall, the frequency of B1 bellies is smaller in comparison to Belegiš I, suggesting a smaller preference.

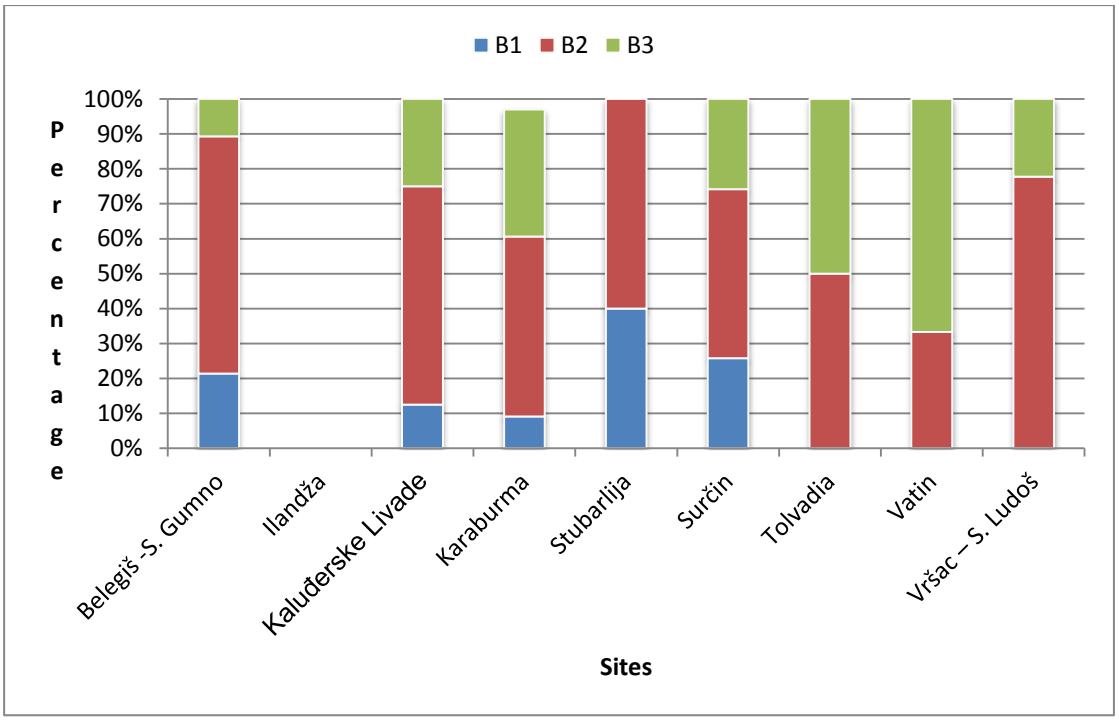


Figure 5.15. Percentage Frequency of Belly Types for Belegiš II vessels

Observed Frequency				
				Total
Belegiš I	170	123	10	303
Belegiš II	20	69	32	121
Expected Frequency				
Belegiš I	135.778	137.208	30.0141	303
Belegiš I	54.221	54.792	11.985	121
Total	190	192	42	424
$X^2 = 82.145$ **df = 2** **p =** 0.145				

Table 5.3. Pearson Chi-Squared Test showing difference between Belegiš I and Belegiš II belly types

Each belly type is used in some capacity for Belegiš I and II vessels revealing an overlap. However, the frequency of use between these two groups of vessels does differ. The data shows that Belegiš I urns have a larger percentage frequency of B1 type bellies and very few B3 bellies. In comparison, Belegiš II vessels display a greater frequency of angular bellies (B3). The sites of Tolvadia, Vatin and Vršac – Stari Ludoš display no B1 type bellies in Belegiš II. However, Table 5.3 shows that there is no significant different between the overall frequencies between Belegiš I and II ($X^2 = 82.145$; $p \geq 0.145$). This once again shows that the repertoire of shape options remained the same throughout, but there is variation in how this materialised across sites.

Lower Body Squatness

Belegiš vessels have lower bodies that are elongated, medium or squat. This is explained in Chapter four. Percentage frequencies relating to these categories are described below.

Belegiš I (Figure 5.16)

Figure 5.16 shows that medium squat and squat body shapes appear in the Belegiš I group on all of the sites. Elongated body forms feature for Belegiš I at the majority of sites, yet not at Stubarlija. The range of elongated, medium and squat forms is therefore present for all but one of the sites.

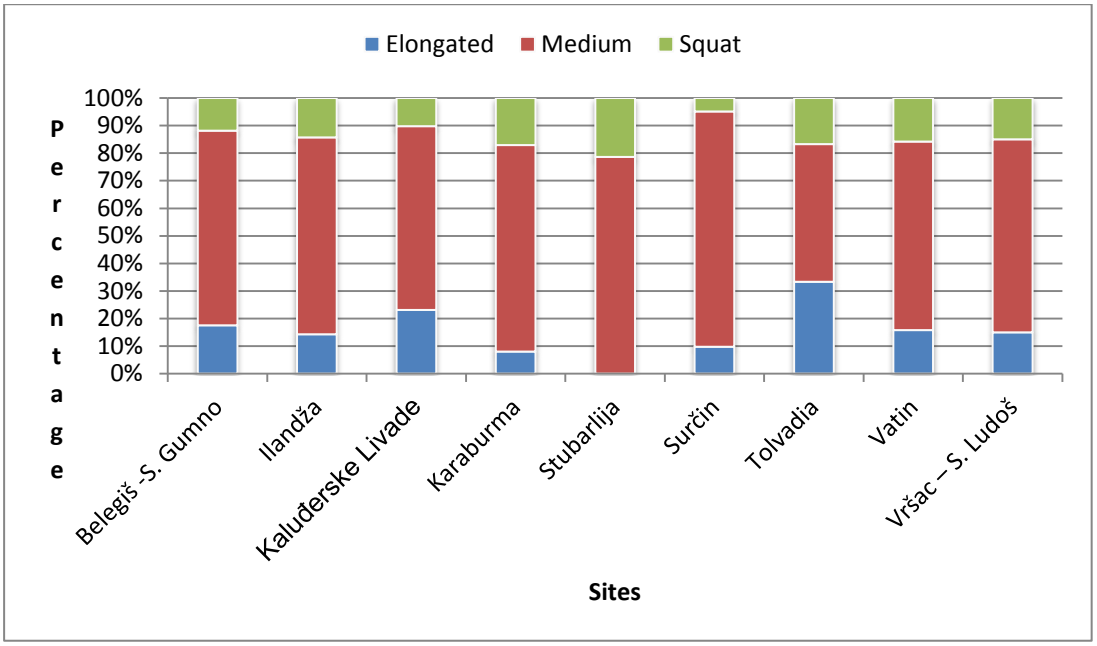


Figure 5.16. Percentage Frequency of Lower Body Squatness of Belegiš I vessels

Belegiš II (Figure 5.17)

For vessels within the Belegiš II group, the highest frequency across sites is for bellies with medium squatness. In comparison to the Belegiš I group, there is a slightly higher frequency of squat vessels. Additionally, the frequency of elongated vessels is much smaller than in the Belegiš I group. The full range of body shapes only appears at Karaburma and Surčin.

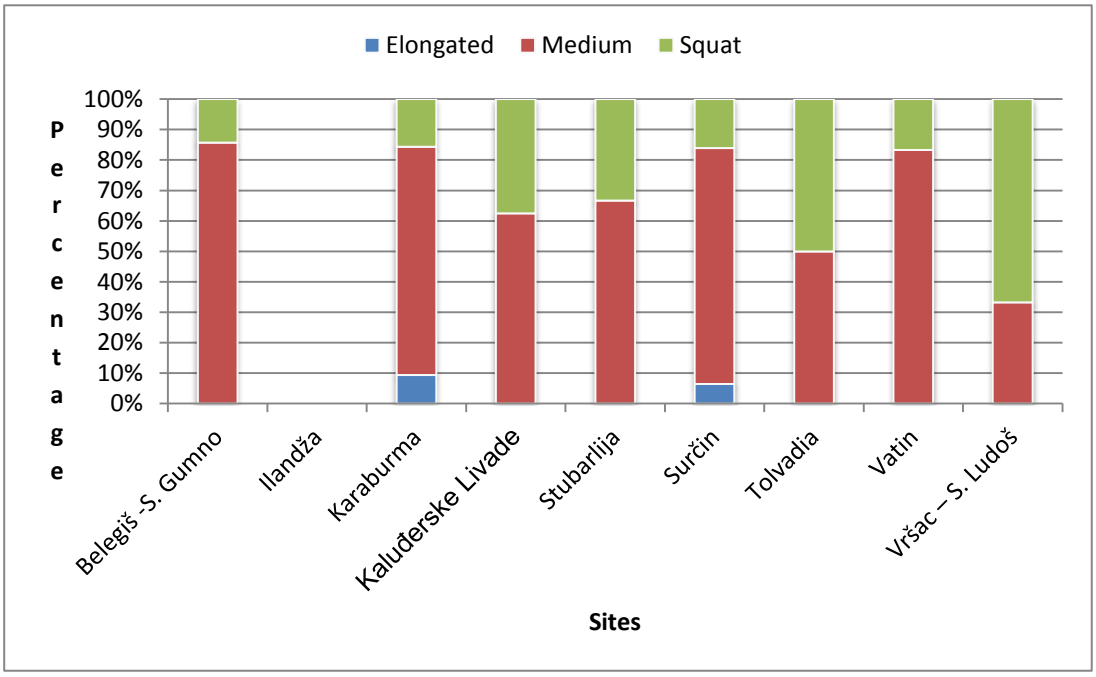


Figure 5.17. Percentage Frequency of Lower Body Squatness of Belegiš II vessels

Observed Frequency				
	Elongated	**Medium**	**Squat**	**Total**
Belegiš I	41	221	40	**302**
Belegiš II	5	91	26	**122**
Expected Frequency				
Belegiš I	32.764	222.226	47.009	**302**
Belegiš I	13.235	89.773	18.990	**122**
Total	**46**	**312**	**66**	**424**
X^2 = 10.851 **df = 2** **p = 0.004***				

Table 5.4. Pearson Chi-Squared Test showing difference between Belegiš I and Belegiš II belly types

The data shows that the majority of all vessels have medium squat bodies. Figure 5.17 shows that Belegiš II vessels demonstrate an increase of squat bodies, particularly the sites of Tolvadia and Vršac – Stari Ludoš. This highlights a very subtle shift in vessel shape over time. This is backed up by Table 5.4 that shows that there is a statistically significant difference between Belegiš I and II (X^2 = 10.851; p≥0.004). Despite this, the range of belly shapes is consistent from Belegiš I to Belegiš II.

Tradition in Shape

The data demonstrates a relatively narrow range of shape characteristics throughout the 500 year span of Belegiš manufacture. Although change in shape occurred over time such as the use of lugs instead of handles, a number of shape variables appear within both Belegiš I and II groups, indicating some continuation of shape preference over time. Therefore it is important not to necessarily see the Belegiš phenomenon in terms of linear progression but instead as a set of manufacturing behaviours, some of which stayed the same, and some of which changed over time. This variation means that tradition, conceptualised as a fundamental commonalty shared by all vessels, sits within shape variables in two ways. First, it is the core principle methods of manufacture such as coil building and slab building methods. Second, it is the repertoire of shape options that stemmed from these methods of making. Highlighting this, the placement of handles or lugs at 90 degree intervals on the widest part of the belly underpins the manufacture of all vessels. This is a key principle of manufacture. Yet there was also a *range* of handles types which shifted minimally from Belegiš I to II. Therefore in terms of shape, tradition sits within the methods of manufacture that underpin all vessels and the also the range of shape options that stem from this.

5. 1. 4 Decoration

Traditional typological categorisations of Belegiš urns identify decoration as constituting a vital aspect of this ceramic phenomenon. The commonalities in decoration are here probed in three key arenas of decorative practice; the use of zones, the suite of motifs and the technical execution of motifs.

Spatial Layout of Decoration

A template (as described in Chapter 4) guided a varied number of decorative layouts on the neck, shoulder and belly of the vessels. These were methodologically determined by creating a diagram that demonstrated the presence and absence of decoration on the vessel. Their percentage frequencies are shown below.

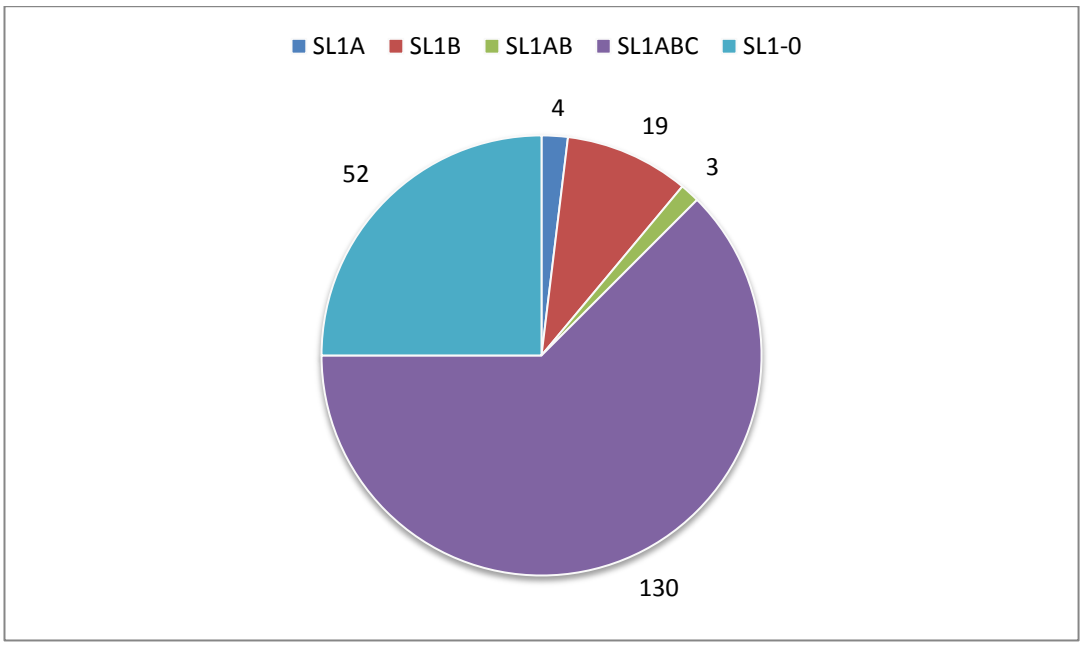
Neck: Zone 1

Belegiš I (Figures 5.18a and 5.18b)

Figure 5.18a shows that the only neck spatial layout that appears on Belegiš I vessels across all of the sites is SL1ABC, where the entire area of the neck is decorated. This happens to also be the most prominent spatial layout, as shown by figure 5.18b; 130 Belegiš I vessels display this decorative layout. The full range of neck layout only appears at Vršac – Stari Ludoš.



Figure 5.18a. Percentage Frequency of Belegiš I Decorative Layout on Neck



5.18b. Frequency of Total Belegiš I neck layouts

Belegiš II (Figures 5.19a and 5.19b)

For the Belegiš II group, the full range of neck layouts appears on more sites in contrast to Belegiš I, as figure 5.19a shows. Figure 5.19b highlights that across all sites there is a preference for no neck decoration; a total of 52 Belegiš II vessels display SL1-0 layouts. The second highest frequency is for SL1A and a total of 42 Belegiš II vessels display a band of decoration located at the top of the neck.

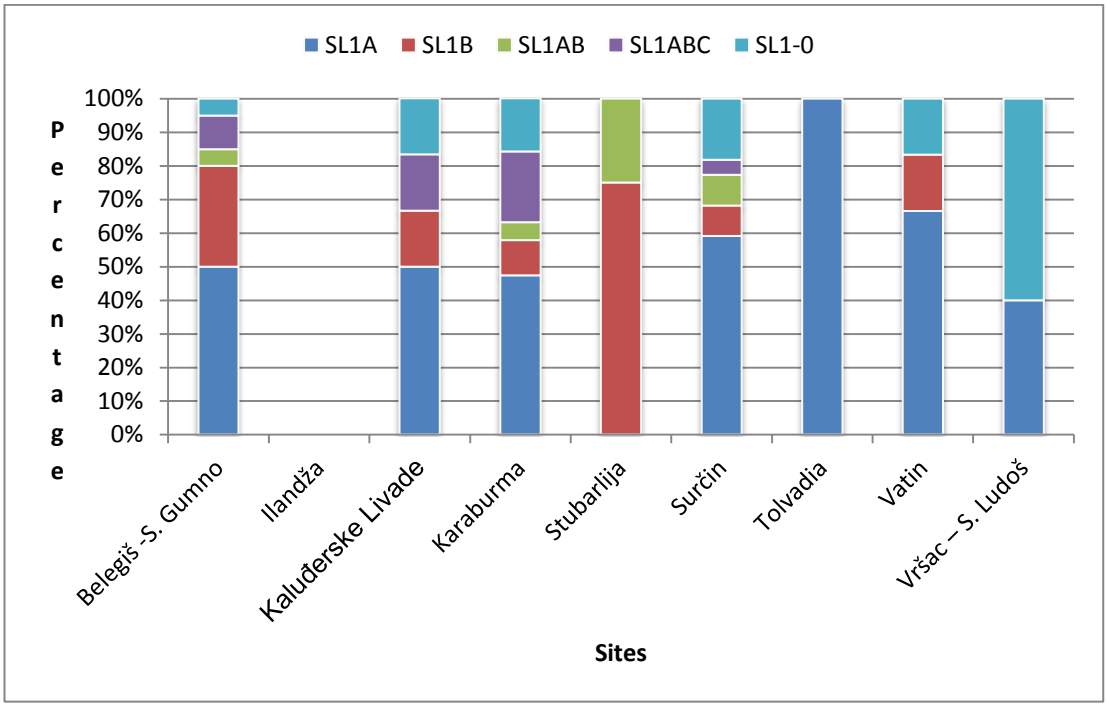
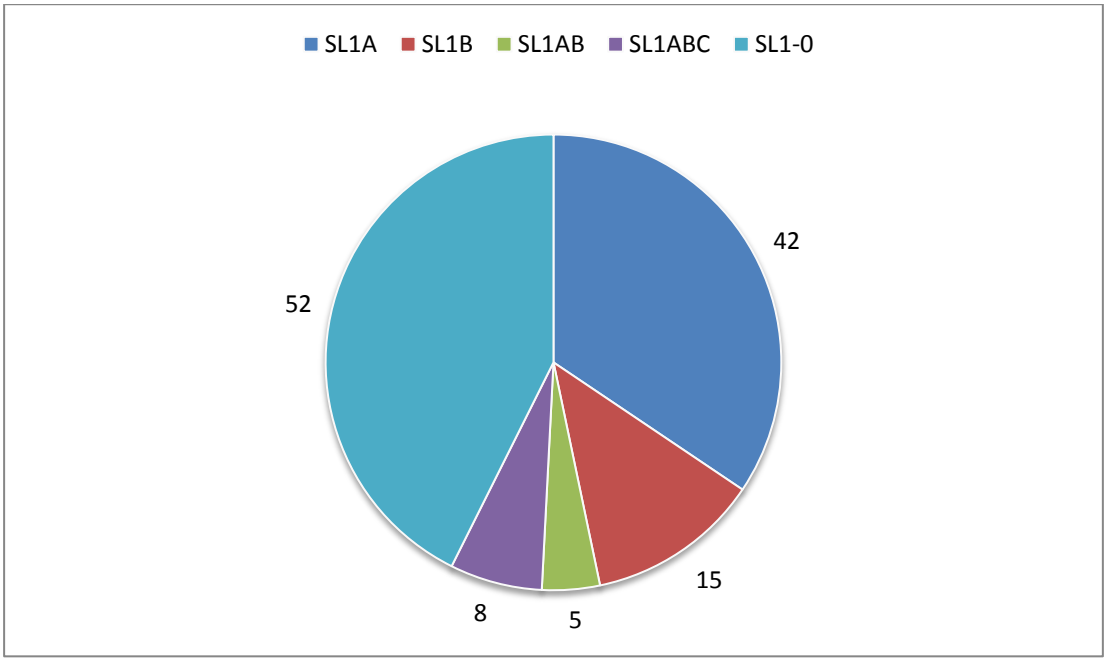


Figure 5.19a. Percentage Frequency of Belegiš II Decorative Layout on Neck



5.19b. Frequency of Total Belegiš II neck layouts

The data suggests that the preference of decorative layouts shifted over time. At the sites of Belegiš- Stojića Gumno, Ilandža, Kaluđerske Livade, Karaburma, Tolvadia and Surčin, a high frequency of Belegiš I vessel necks display SL1ABC layouts meaning that the entire length of the neck is covered in decoration. In contrast, at these sites there was a surge of SL1A neck layout for Belegiš II vessels, meaning that only the top zone of the neck displays decoration. Despite this shift as shown by the change in frequencies of layouts between Belegiš I and II, the range of decorative layouts is the same for both Belegiš I and II, indicating that all vessels were made using a small suite of manufacturing options.

Shoulder: Zone 2

Belegiš I (Figures 5.20a and 5.20b)

Figure 5.20a shows that for the Belegiš I group, only shoulder layout SL2B, where shoulder decoration is located in between the handles, features at every site. Yet this is not the most prominent. Figure 5.20b demonstrates that 103 of the Belegiš I vessels analysed do not display shoulder decoration in any form, conforming to spatial layout SL2-0. In Figure 5.20a it can be seen that the full range of shoulder decoration layouts appears at Kaluđerske Livade, Karaburma, Surčin and Vršac – Stari Ludoš.



Figure 5.20a. Percentage Frequency of Belegiš I Decorative Layout on Shoulder

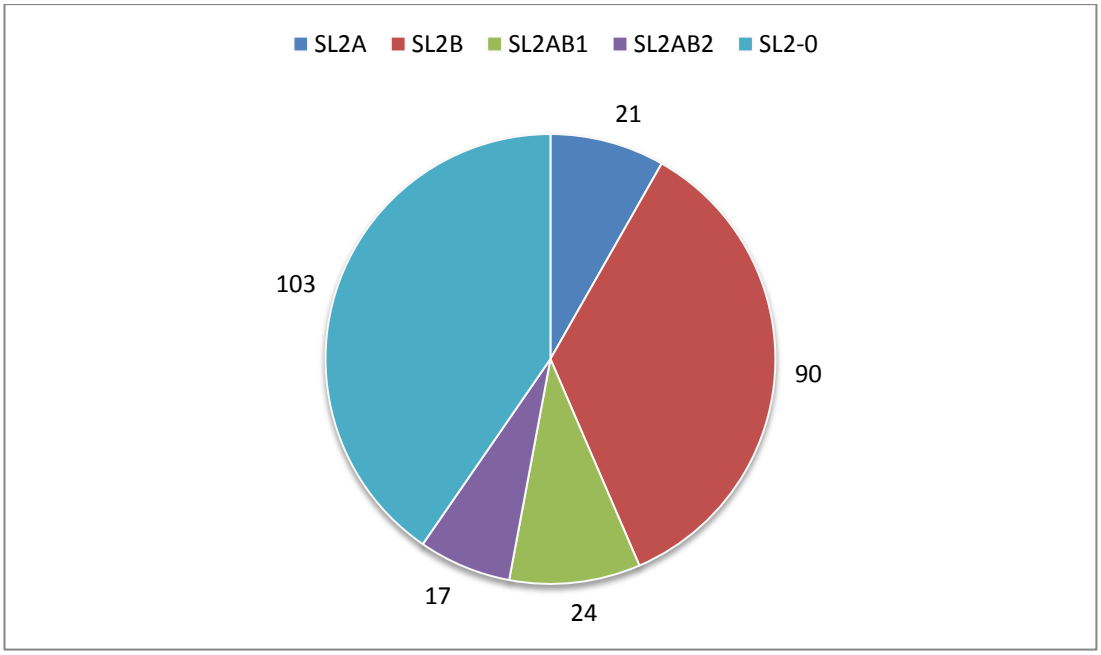


Figure 5.20b. Frequency of Total Belegiš I Shoulder Layouts

Belegiš II (Figures 5.21a and 5.21b)

Spatial layout SL2A, where decoration is placed directly above the handles, features on Belegiš II vessels from all of the sites, as shown by figure 5.21a. This happens to also be the most dominant layout; figure 5.21b demonstrates that a total of 93 Belegiš II vessels have this type of shoulder decoration. This is an overwhelming majority; the second highest frequency is SL2B, of which there are a total of 13.



Figure 5.21a. Percentage Frequency of Belegiš II Decorative Layout on Shoulder

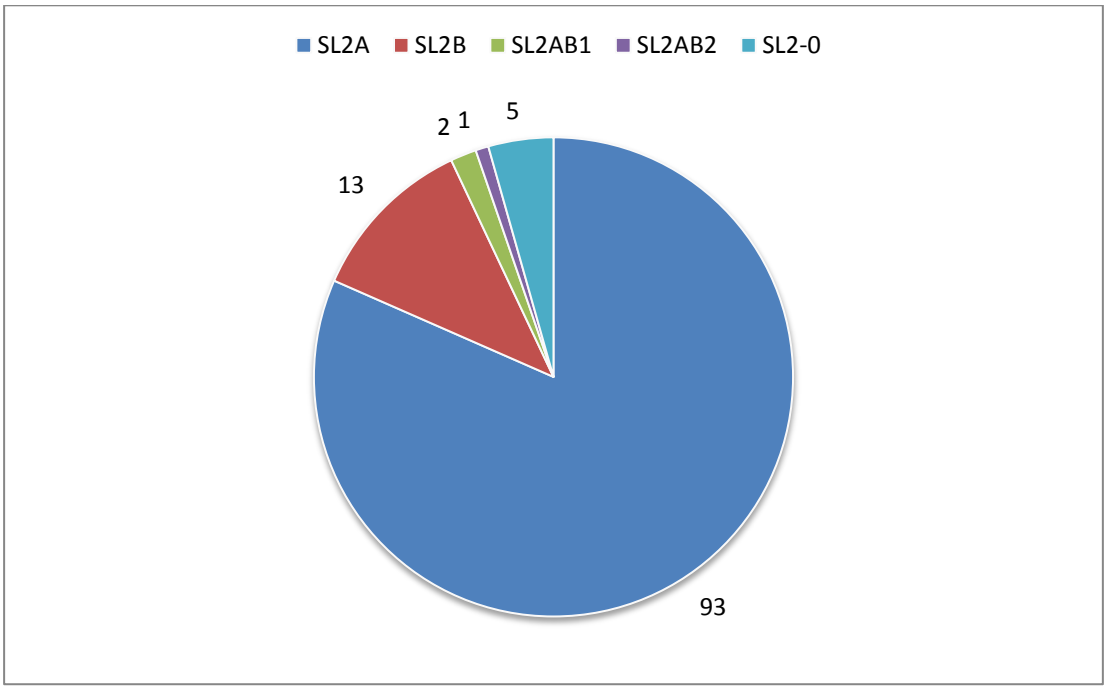


Figure 5.21b. Frequency of Total Belegiš II Shoulder Layouts

The data shows that there is a narrow range of shoulder decorative layouts that is maintained throughout the span of Belegiš manufacture but that the frequencies of these shifted from Belegiš I to II. Across all sites, a high number of Belegiš II shoulder layouts conform to SL2A, meaning that decoration was placed directly above the handles. This can perhaps be interpreted a move towards standardisation in decoration which implies less diversity and more conformity.

Belly: Zone 3

Belegiš I (Figure 5.22)

In Figure 5.22 we can see that the full range of belly decoration layouts for Belegiš I appears at six out of the nine sites; Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma, Surčin, Vatin and Vršac – Stari Ludoš. SL3AB2 is the most featured and prominent, where decoration is placed above the handles and decoration of a different type is placed between the handles.



Figure 5.22. Percentage Frequency of Belegiš I Decorative Layout on Belly

Belegiš II (Figure 5.23)

For Belegiš II, figure 5.23 shows that the range of layouts across the sites is reduced in comparison to Belegiš I. Layout SL3B, where decoration is placed between the handles, features on all of the sites and is the dominant layout. Layout SL3A does not appear on Belegiš II vessels.

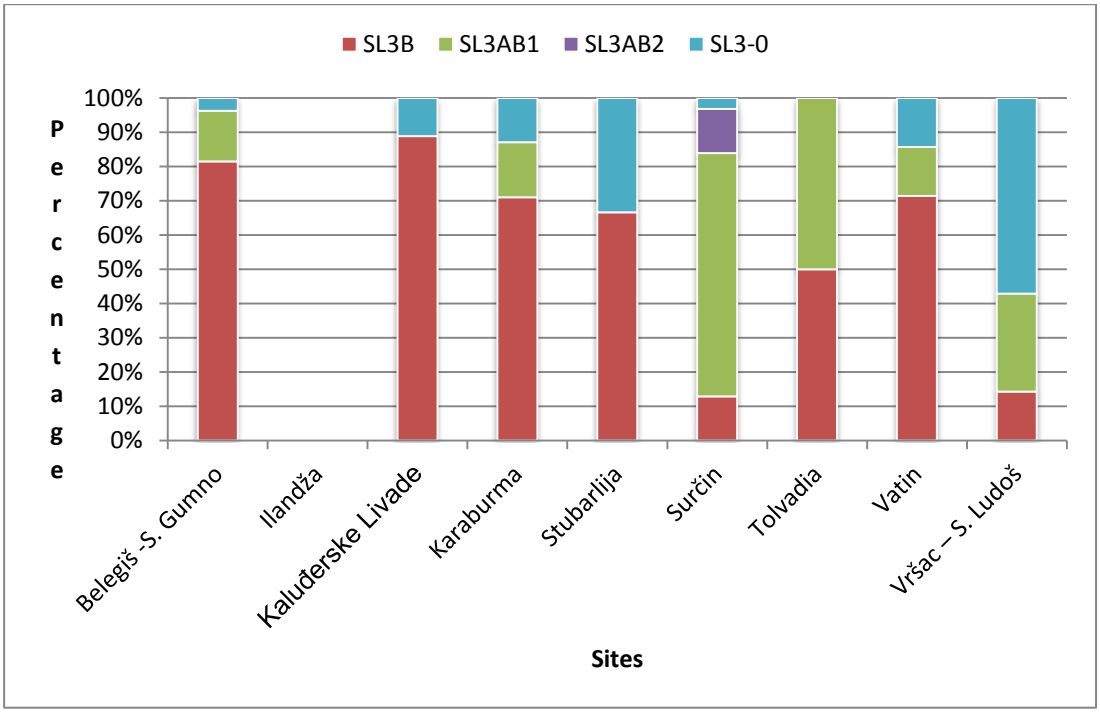


Figure 5.23. Percentage Frequency of Belegiš II Decorative Layout on Belly

Observed Frequency						
	SL3A	**SL3B**	**SL3AB1**	**SL3AB2**	**SL3-0**	**Total**
Belegiš I	17	45	25	114	66	**267**
Belegiš II	0	67	35	4	14	**120**
Expected Frequency						
Belegiš I	11.729	77.271	41.395	81.411	55.194	**267**
Belegiš I	5.271	34.729	18.605	36.589	24.806	**120**
Total	**17**	**112**	**60**	**118**	**80**	**387**
$X^2 = 120.943$ df = 4 p = 0.7						

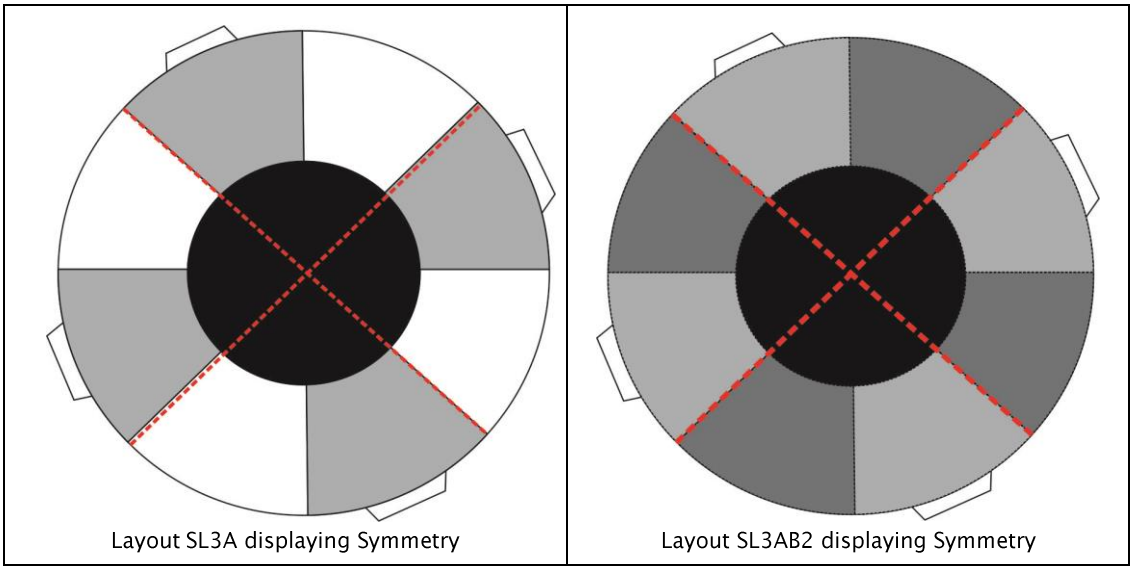
Table 5.5. Pearson Chi-Squared Test showing difference between Belegiš I and Belegiš II belly decorative layouts

The data highlights that despite each vessel using the same belly template, there was diversity in decorative layouts across sites, with different assemblages demonstrating slightly different preferences. In terms of an overall regional trend, there appears to be a shift from Belegiš I to II at the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma, Stubarlija, Tolvadia and Vatin. These all show a noticeable preference for SL3B belly layouts where decoration was placed solely between the handles. This once again illustrates how decoration changed over the span of Belegiš manufacture for some sites. However, overall as shown by Table 5.5, there is no significant statistical difference in frequencies between Belegiš I and II. This indicates that changes were site specific. At the core of all of these layouts was an uncompromised comprehension of decorative template. This speaks of continuity in the shared conceptual understanding that comprises an essential part

of the Belegiš decorative tradition. Therefore although on the surface these two groups of vessels look different, their manufacture was guided by the same underpinning rules.

Tradition in Spatial Layout of Decoration

The data demonstrates that a guiding template was used in a way that always promoted symmetry (Figure 5.24). This is particularly highlighted by zone 2 and 3 layouts; every layout variation has at least two lines of symmetry, with decorative motifs being placed systematically four times around the vessel. Therefore at the core of these layouts is the effect of visual balance. The significance of symmetry is explored further in section 5.2.



Layout SL3A displaying Symmetry | Layout SL3AB2 displaying Symmetry

Figure 5.24. Examples of Symmetrical Layouts

Decorative Motifs

Belegiš urns exhibit decoration that conforms to a distinct repertoire of nine motif types. These motif types each represent a 'family' within which there are sub-variants. These have been described in detail in Chapter 4. The frequency for each motif type and their zonal placement is given below.

Decorative Motifs on Neck: Zone 1A

Belegiš I (Figures 5.25a and 5.25b)

As figure 5.25a displays, for the Belegiš I group, all sites have vessels with M1a motif on zone 1A. Only the sites of Belegiš – Stojica Gumno, Kaluđerske Livade, Karaburma and Surčin have vessels that display M1b decoration in zone 1A, yet these are in relatively low frequencies. Figure 5.25b highlights that across the sites M1a is the dominant motif.

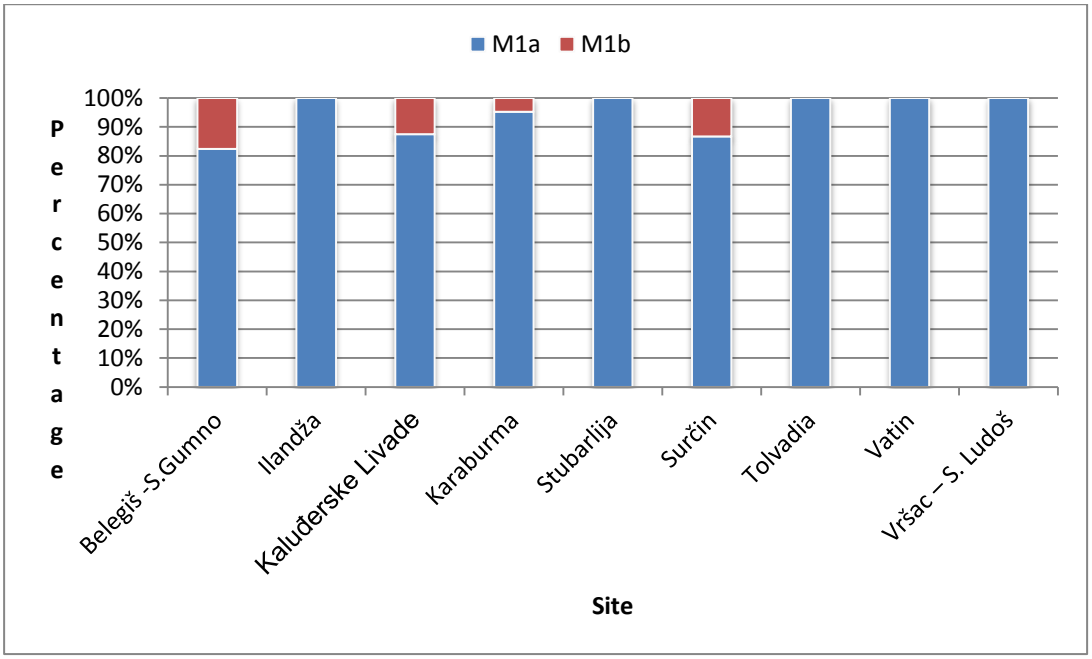


Figure 5.25a. Percentage Frequency of Decorative Motifs in Zone 1A of Belegiš I vessels

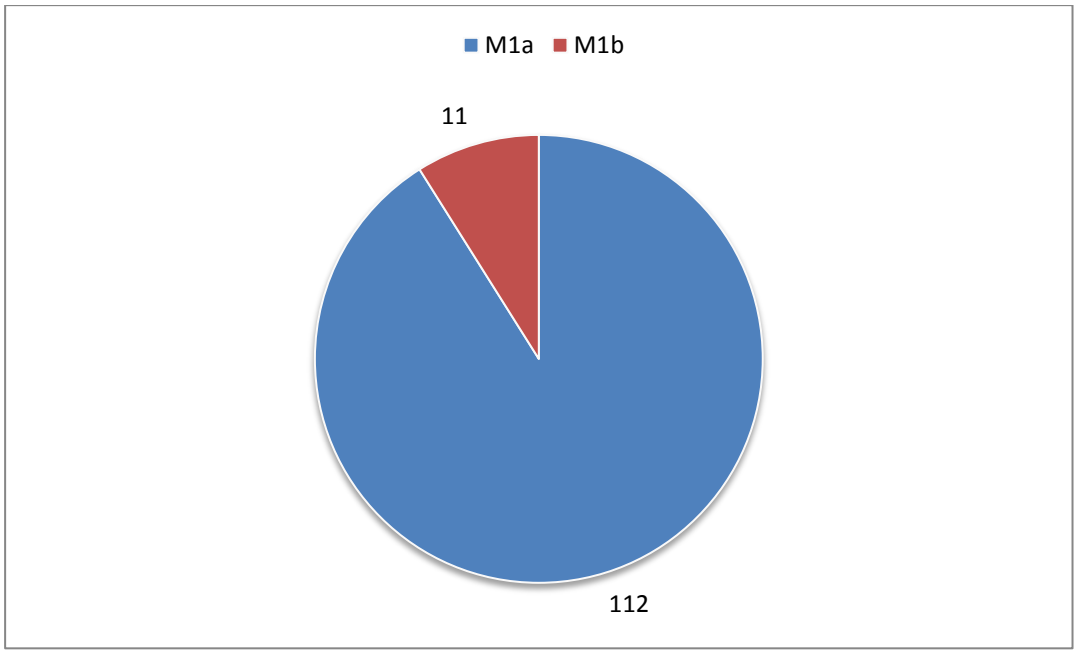


Figure 5.25b. Frequency of Total Belegiš I 1A motifs

Belegiš II (Figures 5.26a and 5.26b)

Figure 5.26a demonstrates that M1a motif appears in zone 1A across all sites. This goes hand in hand with the fact that all of the vessels with decoration in zone 1A display only M1a motif. The range of one is therefore similar across the majority of the sites. In contrast, M1b only appears at the site of Kaluđerske Livade, and as figure 5.25b shows, this is only a frequency of 1.

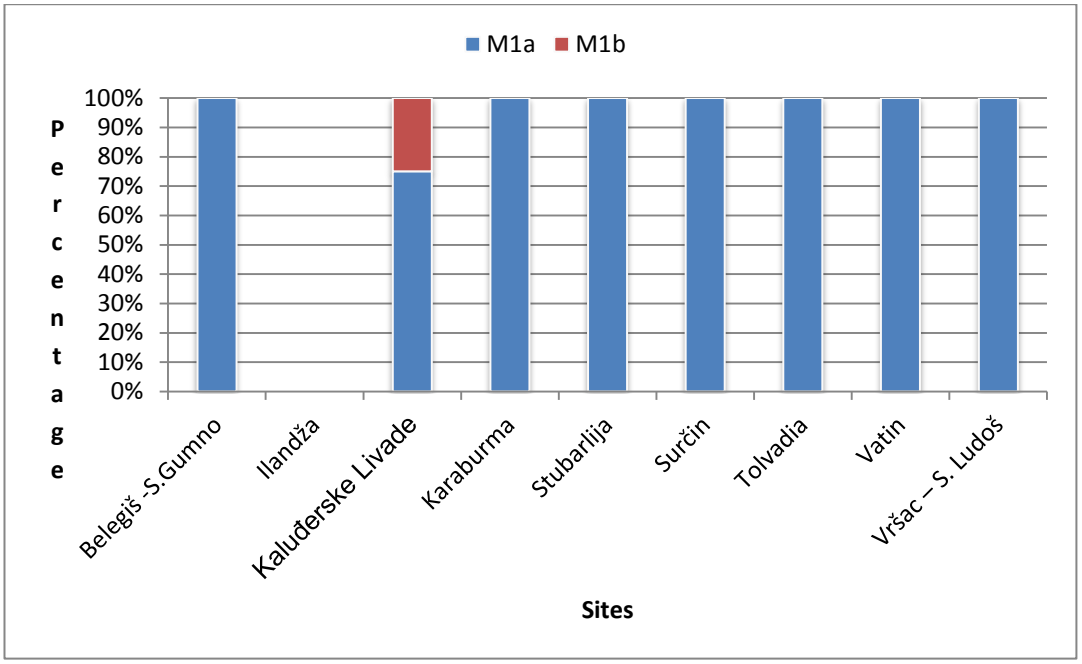


Figure 5.26a. Percentage Frequency of Decorative Motifs in Zone 1A of Belegiš II vessels

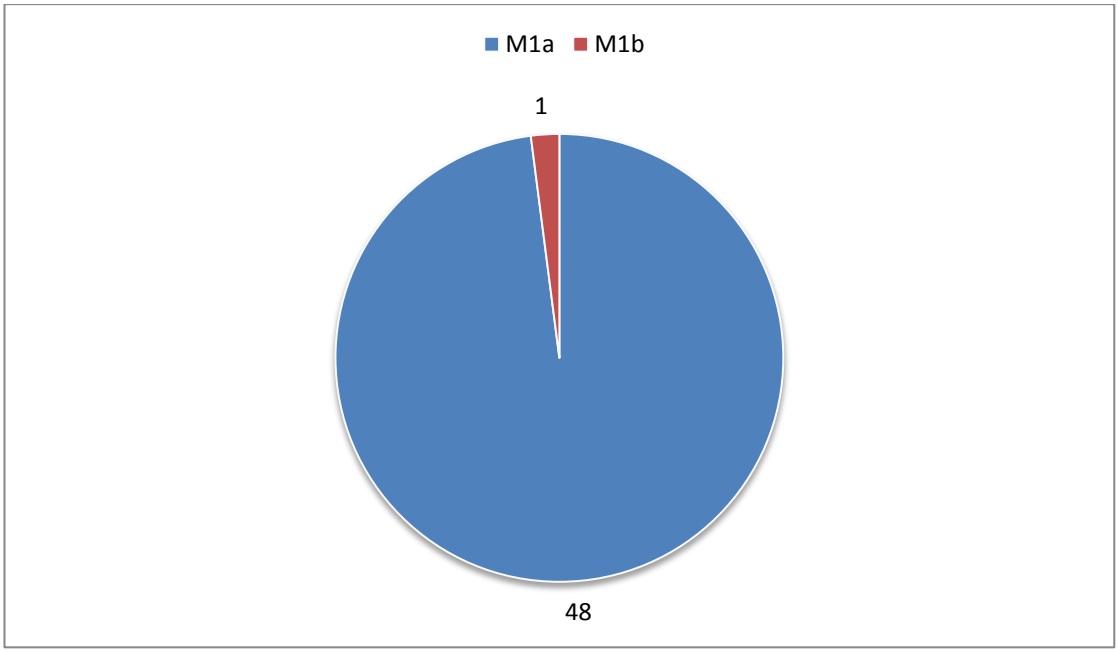


Figure 5.26b. Frequency of Total Belegiš II 1A motifs

Figures 5.26a and 5.26b show that there is almost no change between Belegiš I and II; M1a dominates at the main motif in zone 1A decoration throughout.

Decorative Motifs on Neck: Zone 1B

Belegiš I (Figures 5.27a and 5.27b)

Within zone 1B, both M1a and M1b appear at the sites of Belegiš–Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin. Comparatively, only M1a motif appears in zone 1B on the sites of Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš. This indicates a difference in range at different

sites and also shows that M1b does not appear in zone 1B at all sites. However, all sites demonstrate an overall preference of M1a motif in zone 1B, as indicated by the higher frequencies in both figures 5.27a and 5.27b.

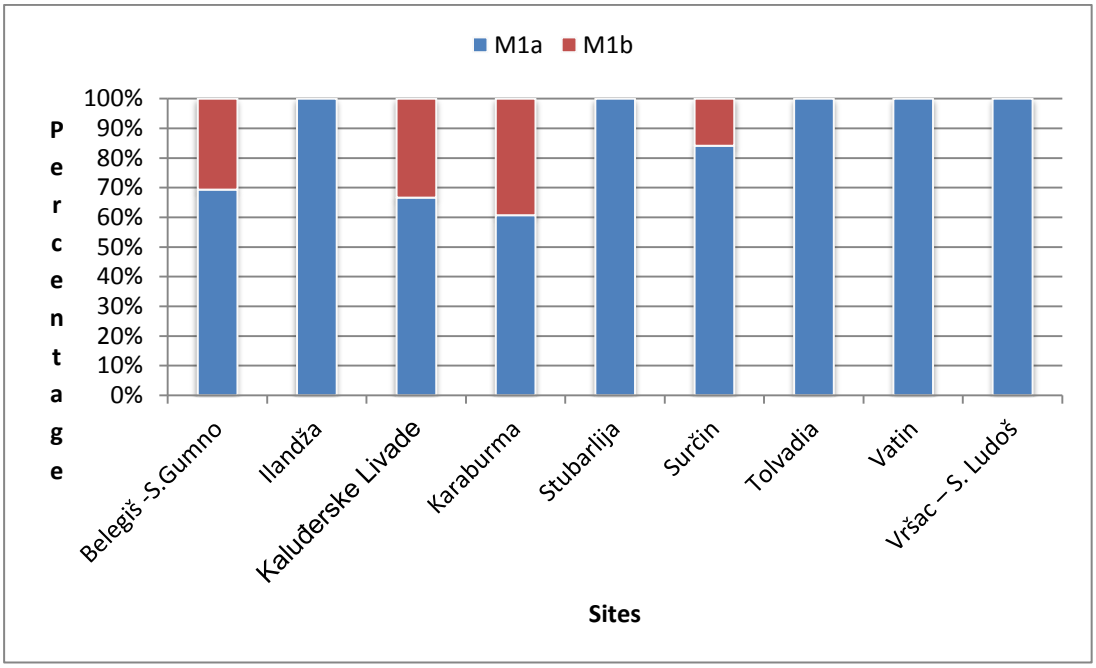


Figure 5.27a. Percentage Frequency of Decorative Motifs in Zone 1B of Belegiš I vessels

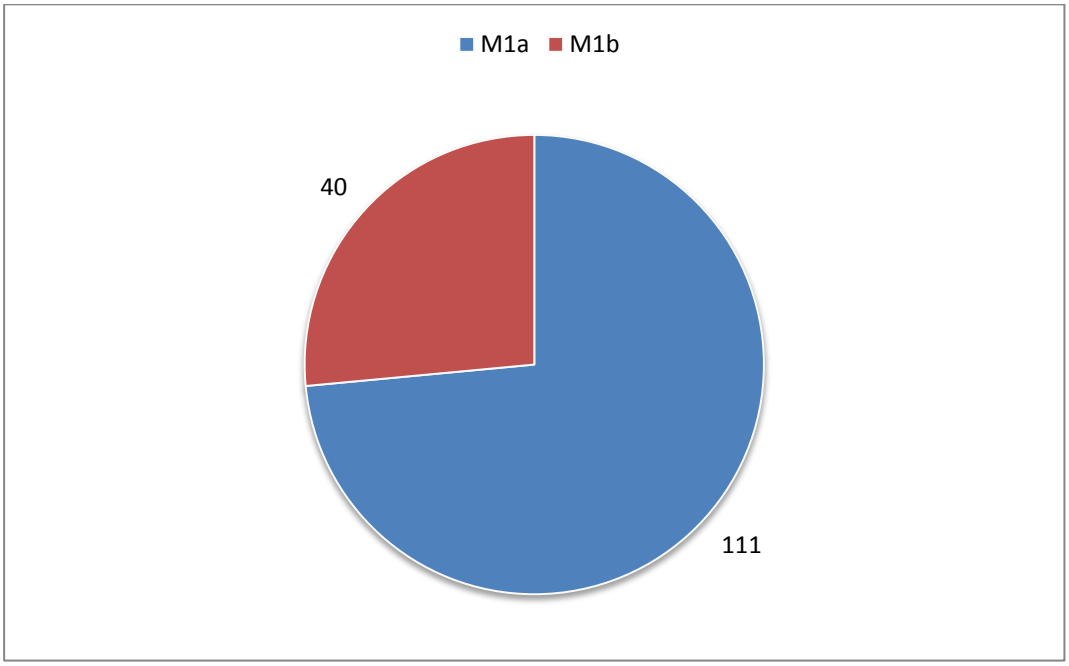


Figure 5.27b. Frequency of Total Belegiš I 1B motifs

Belegiš II (Figure 5.28a and 5.28b)

As shown in figure 5.28a, of all the vessels that displayed decoration in zone 1B, all of the decoration within this zone across the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma, Stubarlija and Surčin is motif M1a, which shows a

shared categorical preference for this motif type. Vessels from Vatin display two types of motif; M1a and M1b showing an increase in range. Vessels from Vršac-Stari Ludoš are an anomaly to the group, and only display M1b motif in zone 1B. Overall across the sites, there are comparatively more vessels displaying M1a decoration in zone 1B in comparison to M1b.

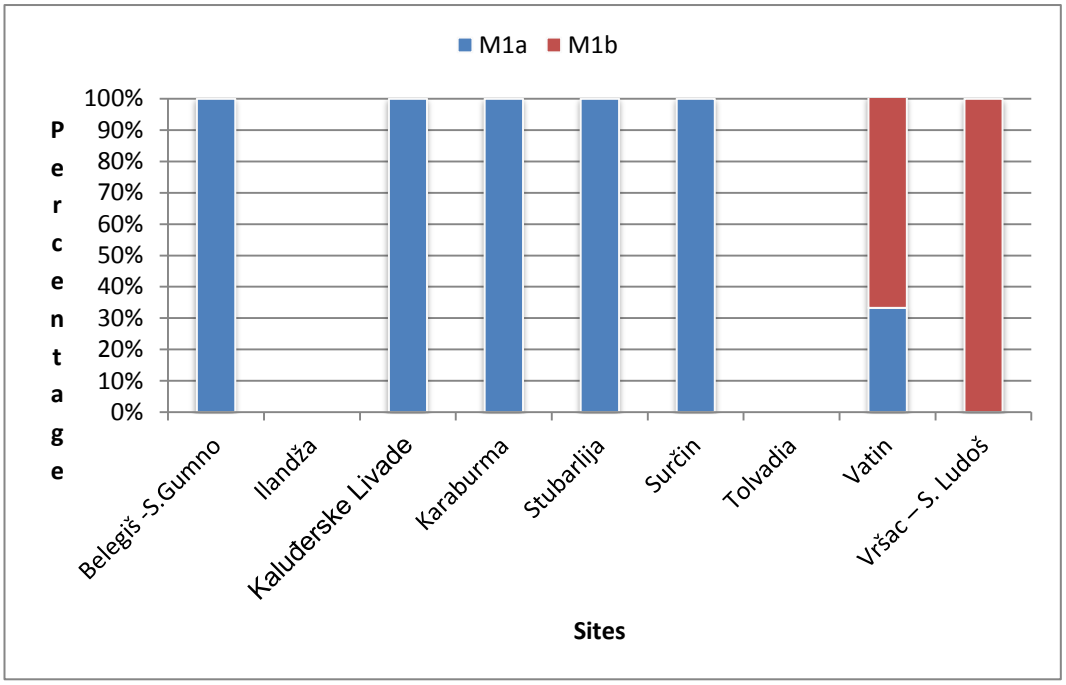


Figure 5.28a. Percentage Frequency of Decorative Motifs in Zone 1B of Belegiš II vessels

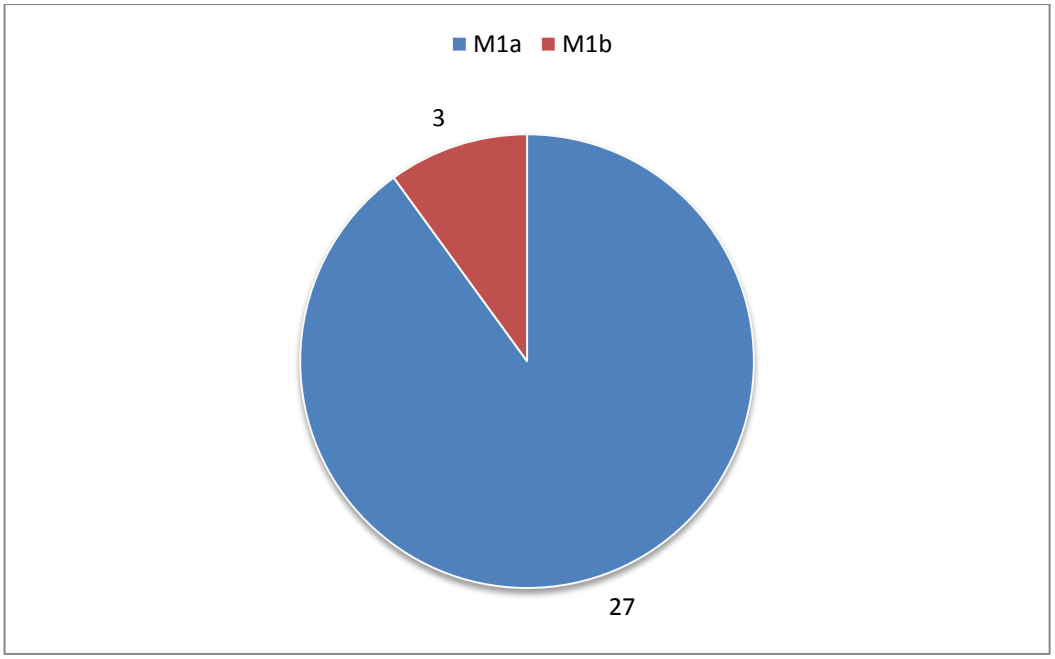


Figure 5.28b. Frequency of Total Belegiš II 1B motifs

The data shows there was a change in the motifs used in zone 1B at particular sites. The sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin show that M1b motif appeared on some Belegiš I urns but not on Belegiš II urns. In

contrast, the sites of Vatin and Vršac – Stari Ludoš show an increase in M1b decoration in Belegiš II.

Decorative Motifs on Neck: Zone 1C

Belegiš I (Figures 5.29a and 5.29b)

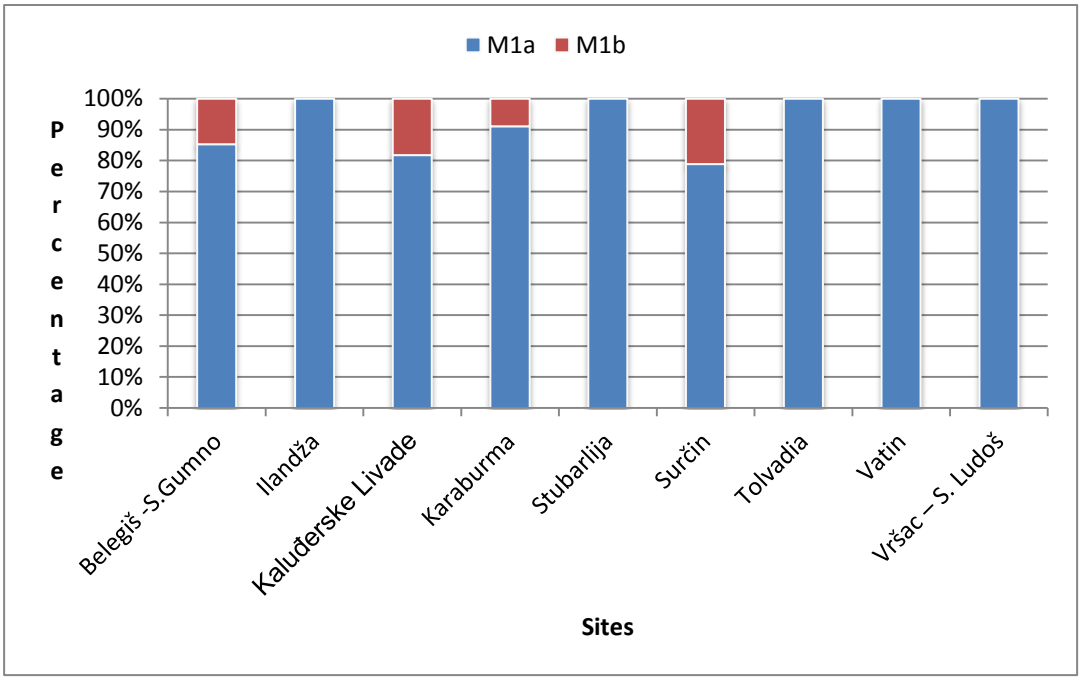


Figure 5.29a. Percentage Frequency of Decorative Motifs in Zone 1C of Belegiš I vessels

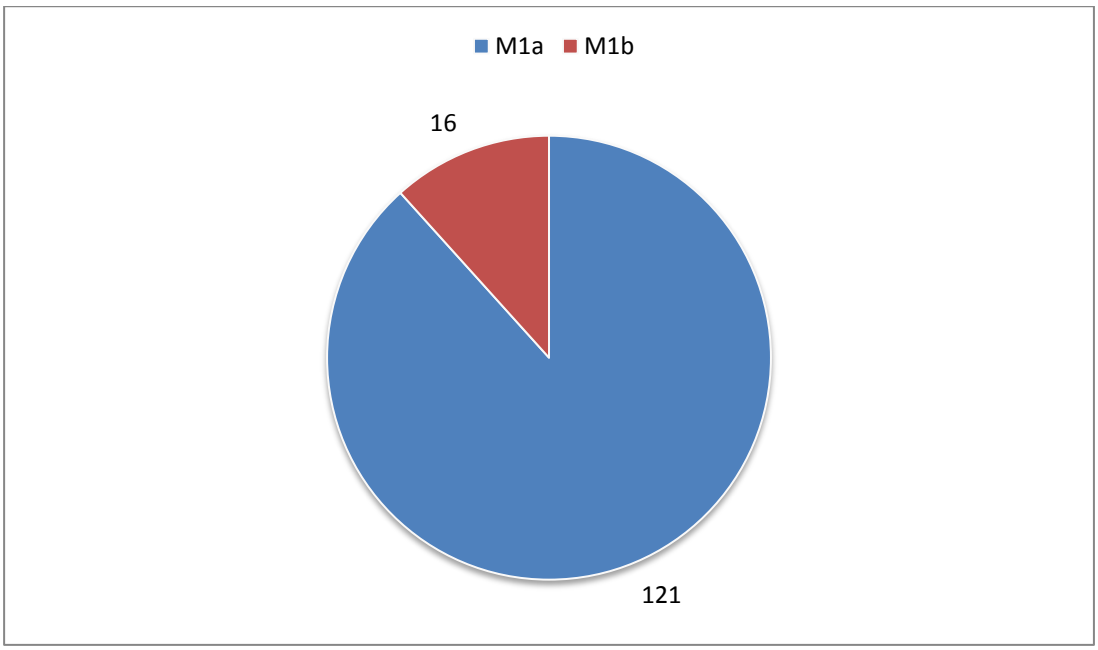


Figure 5.29b. Frequency of Total Belegiš I 1C motifs

Belegiš II (Figures 5.30a and 5.30b)

As is shown in figures 5.30a below, motif M1a appears on vessels across all sites apart from Surčin. For the sites of Karaburma, Kaluđerske Livade and Stubarlija, it is the only motif used in zone 1C, which is indicative of an overwhelming preference for this motif type. Surčin is the only site which displays solely M1B motif in zone 1C, and at Belegiš – Stojića Gumno only both M1a and M1b motifs appear in zone 1C. Figure 5.30b shows that the frequency of M1a motifs in zone 1C is comparatively high in contrast to M1b.

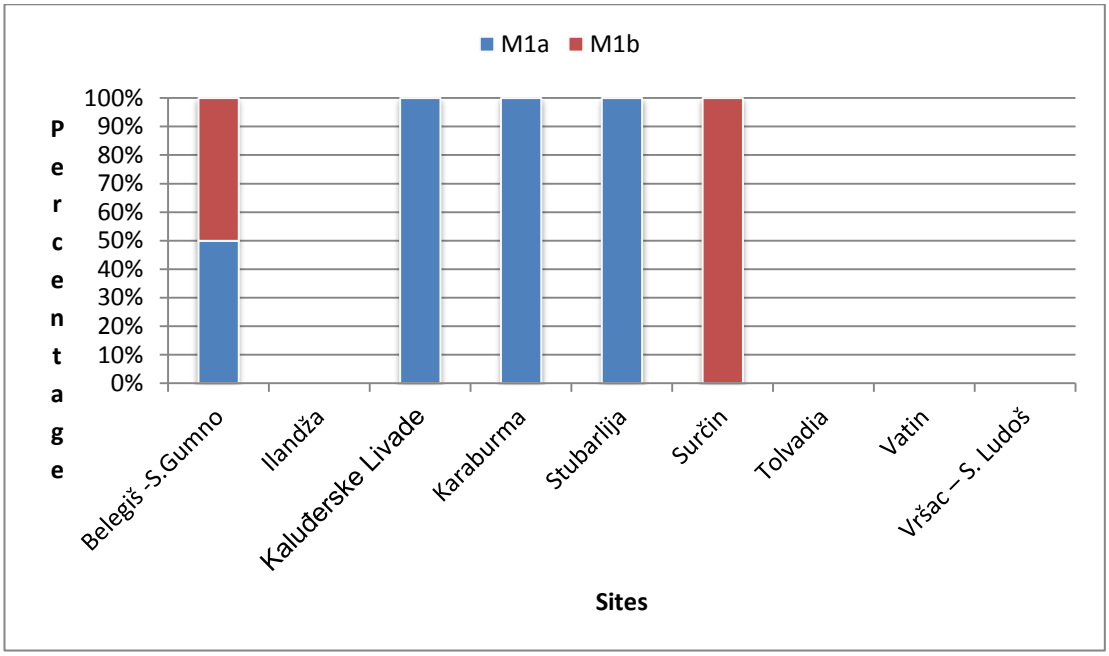


Figure 5.30a. Percentage Frequency of Decorative Motifs in Zone 1C of Belegiš II vessels

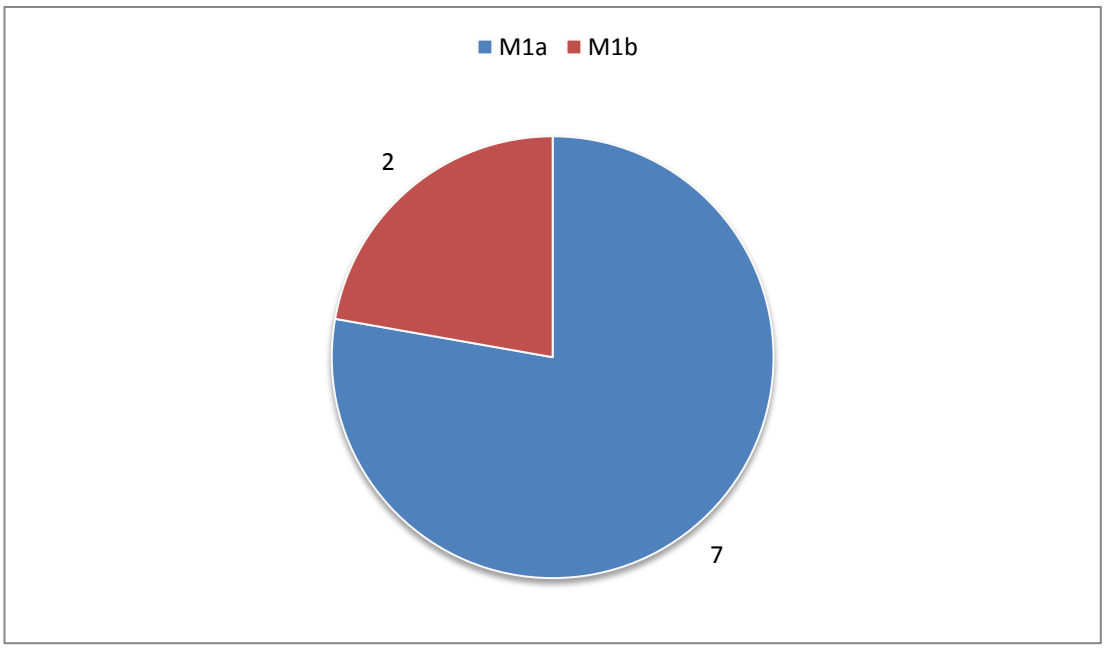


Figure 5.30b. Frequency of Total Belegiš II 1C motifs

The data shows a shift from Belegiš I to II of motif types used in zone 1c at the site of Surčin (from M1a to M1b). However, the sites of Kaluđerske Livade and Karaburma demonstrate the loss of M1b as a motif option in Belegiš II.

The data for neck decoration across zones 1A, 1B and 1C shows that there is continuity in neck motifs between Belegiš I and II. A very high proportion of vessels demonstrate the execution of straight horizontal bands (M1a) placed around the neck. Yet other vessels demonstrate M1b decoration, although the use of this between Belegiš I and II is site dependent. These motifs form the range of neck decoration options, and each maker, regardless of whether they executed M1a or M1b, drew from the same repertoire. This repertoire therefore remains unaltered over time.

Decorative Motifs on Shoulder: Zone 2A

Belegiš I (Figures 5.31a and 5.31b)

Figure 5.31a shows that the range of decorative motifs is not uniform across all the sites, and motifs appear on some sites in zone 2A, but not others. M1b motif has the highest frequency at Belegiš–Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin, whereas it is M2b that has the highest frequency at the sites of Ilandža, Vatin and Vršac – Stari Ludoš. At Tolvadia, M2a motif appears most frequently in zone 2A. Figure 5.31b demonstrates that across the sites, it is M1b that has the highest frequency of use in zone 2A, closely followed by M1b and then M2c.

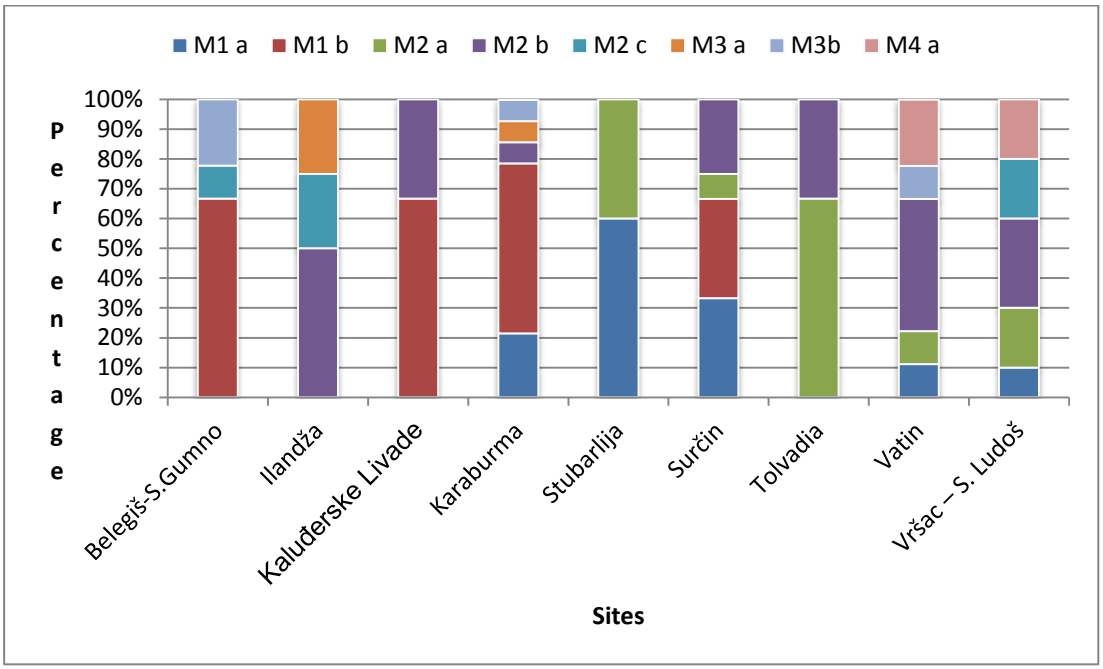


Figure 5.31a. Percentage Frequency of Decorative Motifs in Zone 2A of Belegiš I vessels

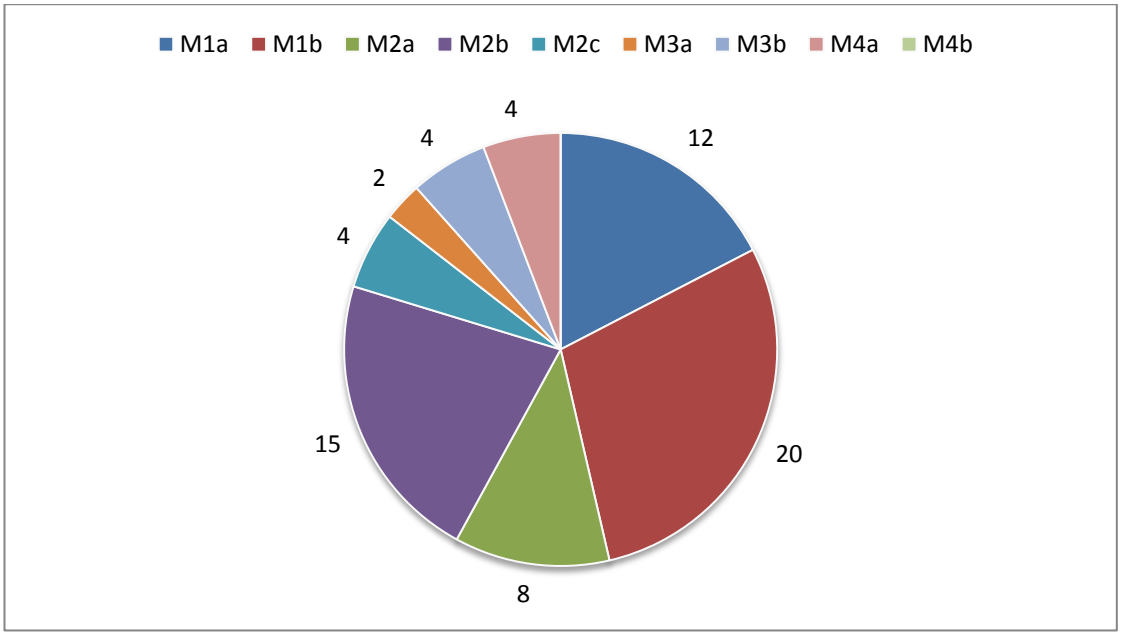


Figure 5.31b. Frequency of Total Belegiš I 2A motifs

Belegiš II (Figures 5.32a and 5.32b)

Figure 5.32a paints a different picture for Belegiš II vessels. There is an extremely high frequency of motif M2c in zone 2A, across all sites except for Ilandža and Kaluđerske Livade. In contrast, Kaluđerske Livade shows a preference for the use of M2b motifs in zone 2A and Ilandža displays only M3a motifs. Figure 5.32b demonstrates that the overwhelming majority of motifs in zone 2A across all the sites is M2c.

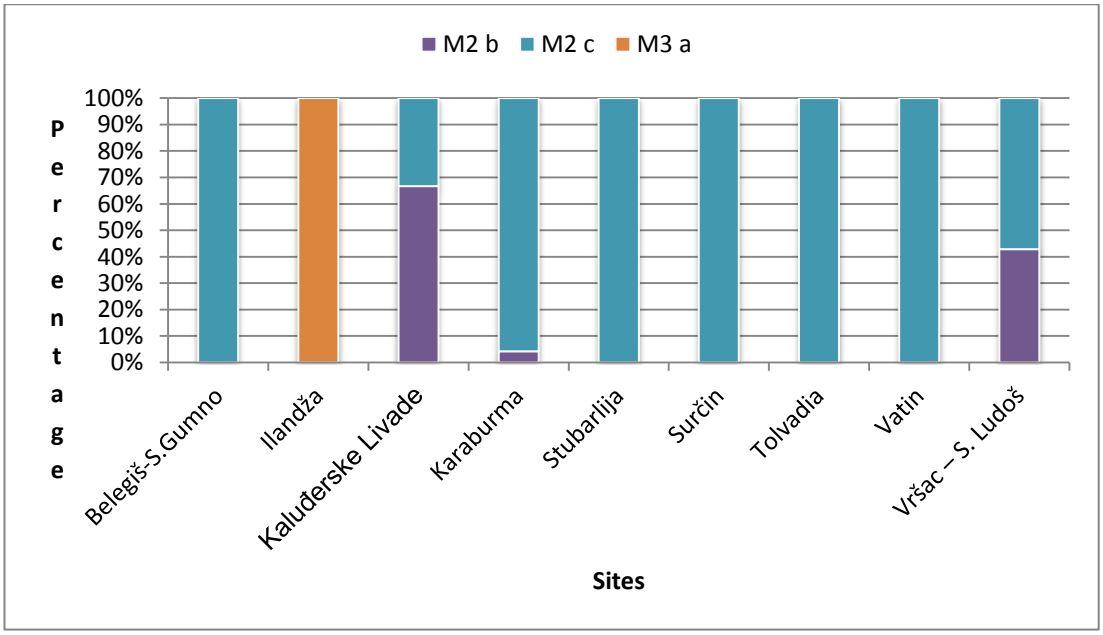


Figure 5.32a. Percentage Frequency of Decorative Motifs in Zone 2A of Belegiš II vessels

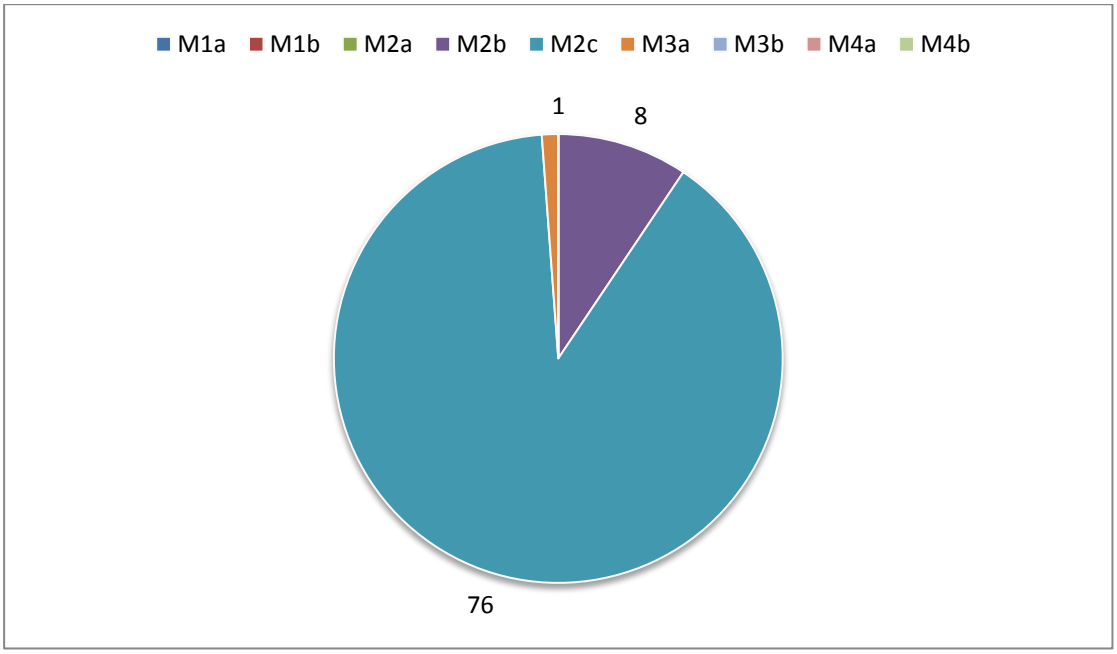


Figure 5.32b. Frequency of Total Belegiš II 2A motifs

The data demonstrates that in terms of Belegiš I vessels, there was diversity in the decoration placed within zone 2A. This zone displays four main types of motif: M1, M2, M3 and M4. These have a total of eight subcategories. In comparison, Belegiš II vessels display only two main types of decoration in this zone, M2 and M3, of which there are only a total of three sub variants. The majority of sites (Belegiš– Stojića Gumno, Karaburma, Stubarlija, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš) display motif variant M2c in this zone. This once again suggests that Belegiš II vessels signal a narrowing of decorative options.

Decorative Motifs on Shoulder: Zone 2B

Belegiš I (Figures 5.33a and 5.33b)

Figure 5.33a shows that in zone 2B, as with zone 2A, for Belegiš I vessels the range of motifs is not shared by all the sites and what appears on one site does not necessarily appear on another. Motif M2b is the most prominent at the sites of Ilandža, Karaburma and Tolvadia. Motif M2b appears in zone 2B at all of the sites apart from Vršac – Stari Ludoš. Motif M2a has the highest frequency at the sites of Belegiš – Stojića Gumno, Stubarlija, Surčin and Vršac – Stari Ludoš. The lowest frequency is M3b, which only appears at Belegiš – Stojića Gumno and Karaburma. Figure 5.33b shows that across the sites, the highest preference is for motif M2c in zone 2B and the second highest frequency is motif M2a.

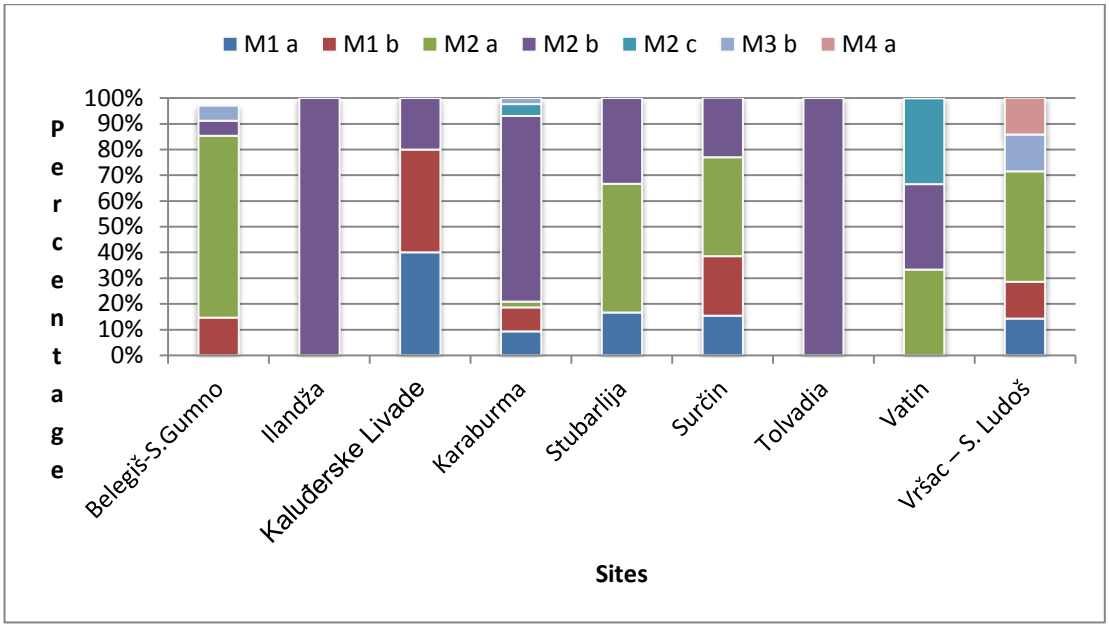


Figure 5.33a. Percentage Frequency of Decorative Motifs in Zone 2B of Belegiš I vessels

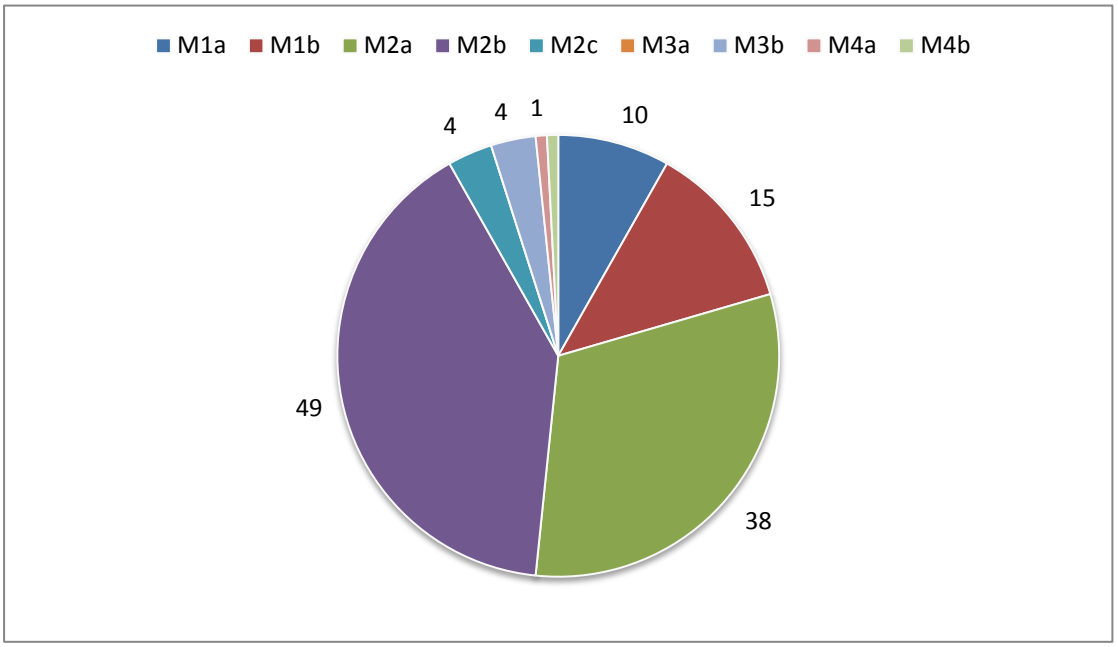


Figure 5.33b. Frequency of Total Belegiš I 2B motifs

Belegiš II (Figures 5.34a and 5.34b)

The picture changes for Belegiš II vessels, as shown by figure 5.34a. Ilandža, Vatin and Vršac – Stari Ludoš do not display any decoration in zone 2B. Motif M2c is the only motif that appears in zone 2B on Belegiš II vessels at the sites of Kaluđerske Livade, Karaburma and Stubarlija. It also appears at the sites of Belegiš – Stojića Gumno and Surčin is smaller frequencies. Tolvadia is the only site to have Belegiš II vessels that display M1b decoration in zone 2B. Figure 5.34b shows that across all the sites, for those that do display decoration in zone 2B, the overall preference is

for M2c. Yet the frequencies show that a small number of Belegiš II vessels have decoration placed within this zone.

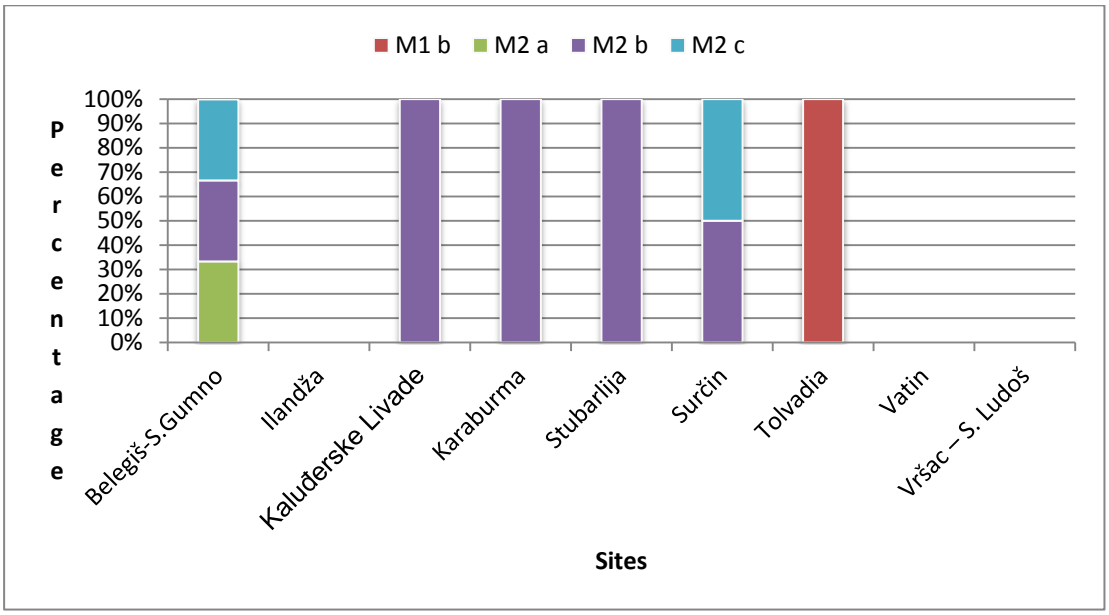


Figure 5.34a. Percentage Frequency of Decorative Motifs in Zone 2B of Belegiš II vessels

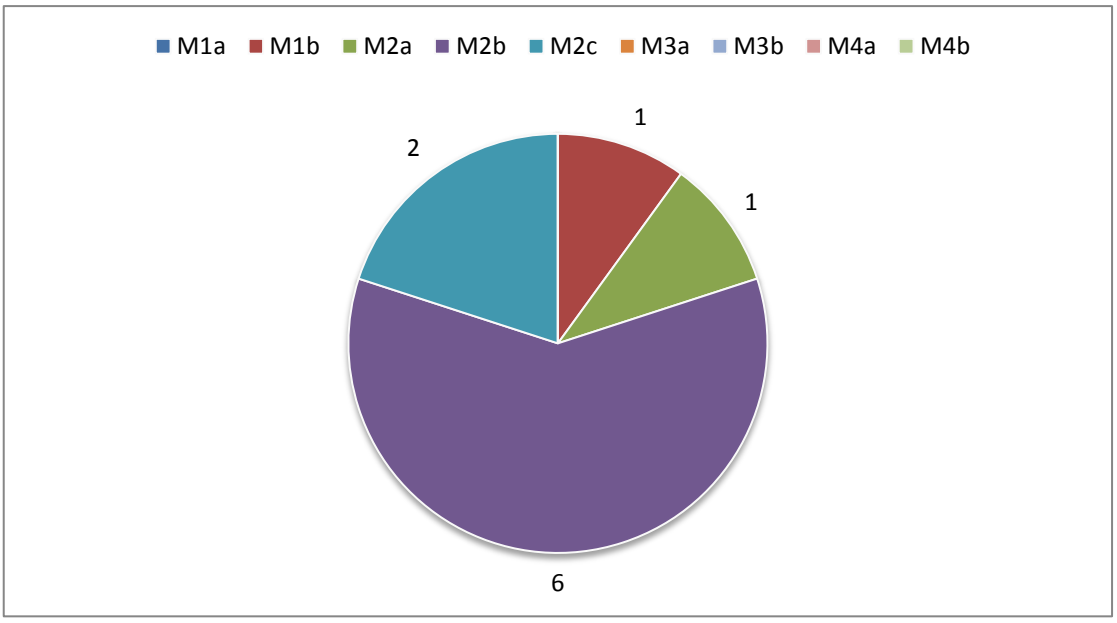


Figure 5.34b. Frequency of Total Belegiš II 2B motifs

Similar to shoulder decoration in zone 2A, the data showed that Belegiš I vessels display more diverse option of motifs in comparison to Belegiš II vessels. On the whole, Belegiš II vessels do not tend to have decoration in this zone as demonstrated in Figures 5.20 and 5.21. When they do, the data shows that there is a tendency for this to be of M2b type again highlighting a tightening of tradition. This trend however appears to depend on the site. As an example, the site of Tolvadia goes against this tendency; all vessels show M1b as shoulder decoration in zone 2B.

Decorative Motifs on Belly: Zone 3A

Belegiš I (Figures 5.35a and 5.35b)

Figure 5.35a clearly demonstrates that the range of motifs placed in zone 3A was not the same across all of the sites. That said, there are motifs that do appear on all of the sites, most noticeably M5a. M6a also appears on all the sites, except for Ilandža. This indicates that these sites were bound together by similarity in the use of decorative motif. The frequency of motif occurrence differs from site to site. The frequency of M8a is particularly high at the sites of Tolvadia and Ilandža. In contrast, it appears in smaller frequencies at the sites of Belegiš – Stojića Gumno, Kaluđerske Livade and Karaburma. Instead M6a appears in higher frequencies on these sites. Motif M8b only appears at Karaburma and M6b only appears at Vatin. Figure 5.35b shows that across all sites, M6a has the highest frequency, closely followed by M8a.

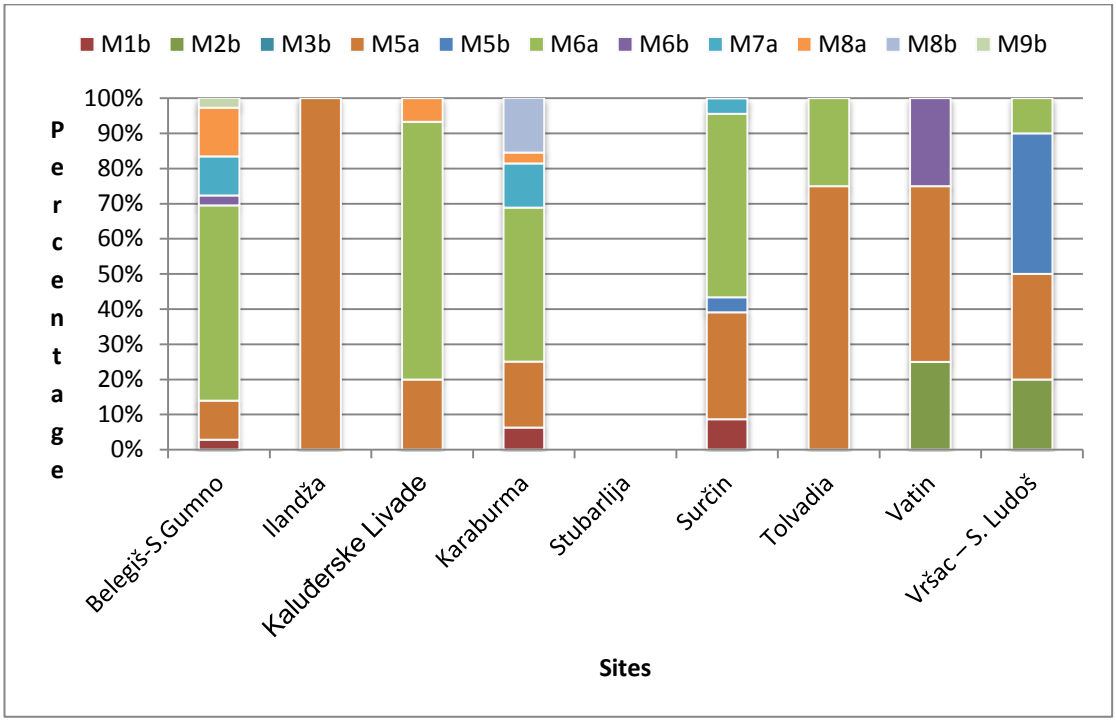


Figure 5.35a. Percentage Frequency of Decorative Motifs in Zone 3A of Belegiš I vessels

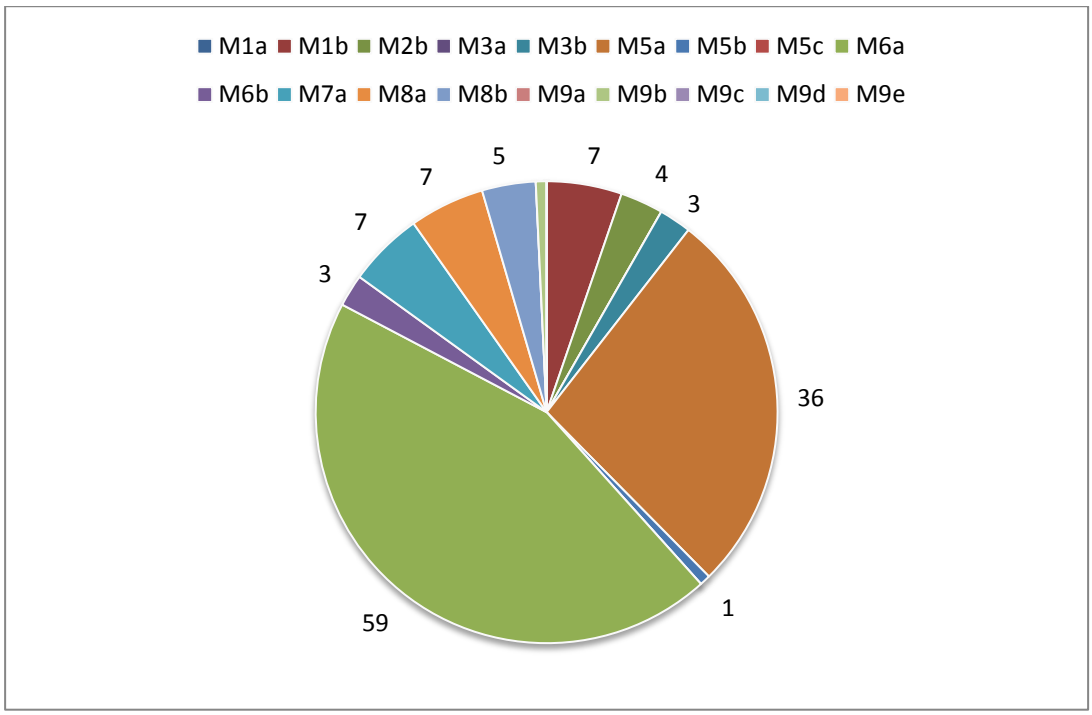


Figure 5.35b. Frequency of Total Belegiš I 3A motifs

Belegiš II (Figures 5.36a and 5.36b)

Figure 5.36a below shows a stark contrast. The sites of Ilandža, Kaluđerske Livade, Stubarlija, Vatin and Vršac – Stari Ludoš do not display decoration in zone 3A. At Belegiš – Stojića Gumno, Karaburma and Surčin, all vessels that do display M5A, showing real conformity. At Tolvadia there is a preference for M8a motif also, but M6a occurs as well.

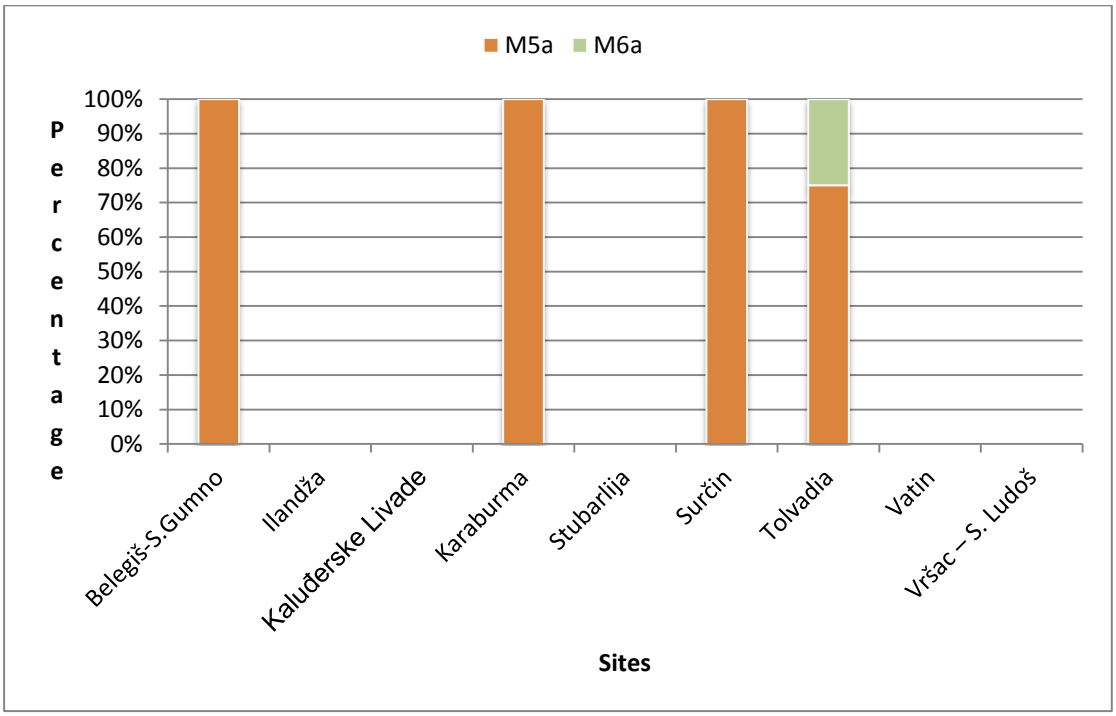


Figure 5.36a. Percentage Frequency of Decorative Motifs in Zone 3A of Belegiš II vessels

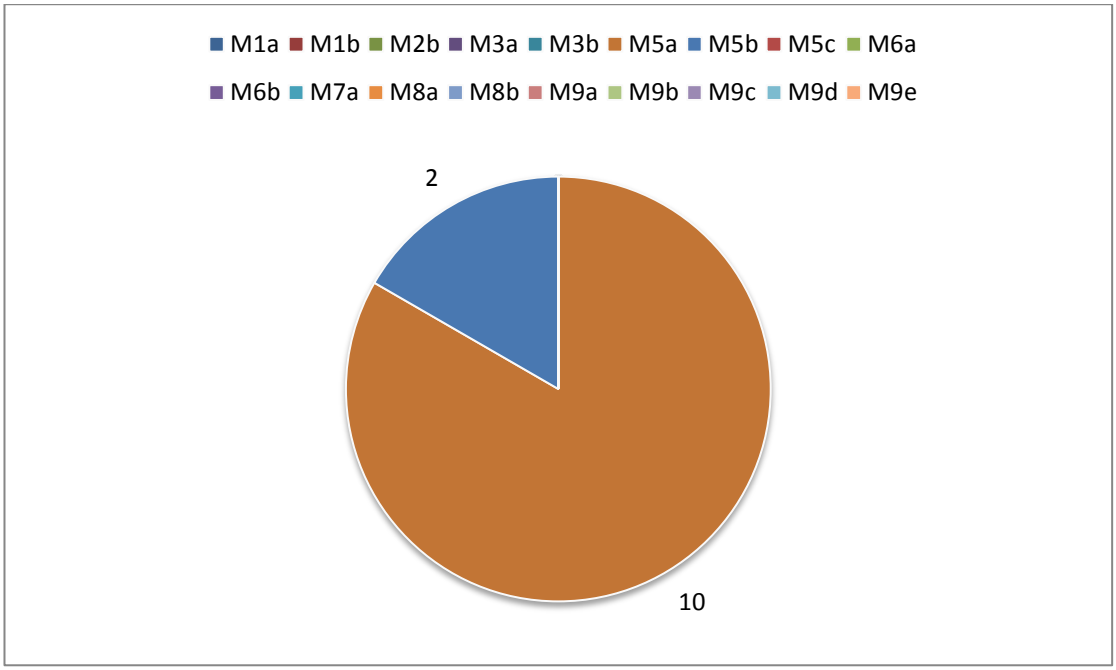


Figure 5.36b. Frequency of Total Belegiš I 3A motifs

Once more, the data shows a contrast between Belegiš I and II motifs. Belegiš I vessels exhibit a range of eight main motif types with a total of eleven sub variants. These vary across sites, yet still conform to a distinct repertoire of belly motif options that is shared across the Belegiš region. Comparatively, Belegiš II vessels show two motif types, although the vast majority of decoration conforms to one motif sub-variant, M5a.

Decorative Motifs on Belly: Zone 3B

Belegiš I (Figures 5.37a and 5.37b)

Figure 5.37a shows that the range of motifs placed in zone 3B is not the same across the sites. Is the only M5a however appears on all sites in varying frequencies. The motif with the highest frequency for Belegiš – Stojića Gumno and Vatin is M6b. For Karaburma and Tolvadia is the highest frequency is M9a. For Ilandža, Stubarlija, and Surčin, it is M5a.

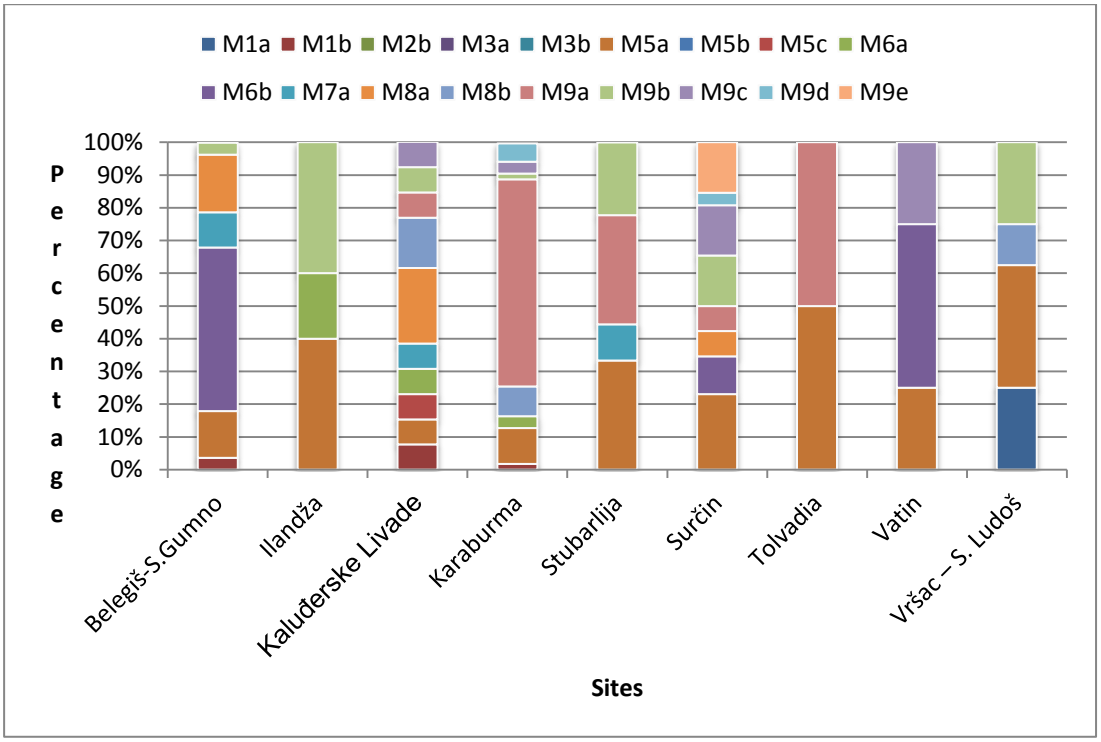


Figure 5.37a. Percentage Frequency of Decorative Motifs in Zone 3B of Belegiš I vessels

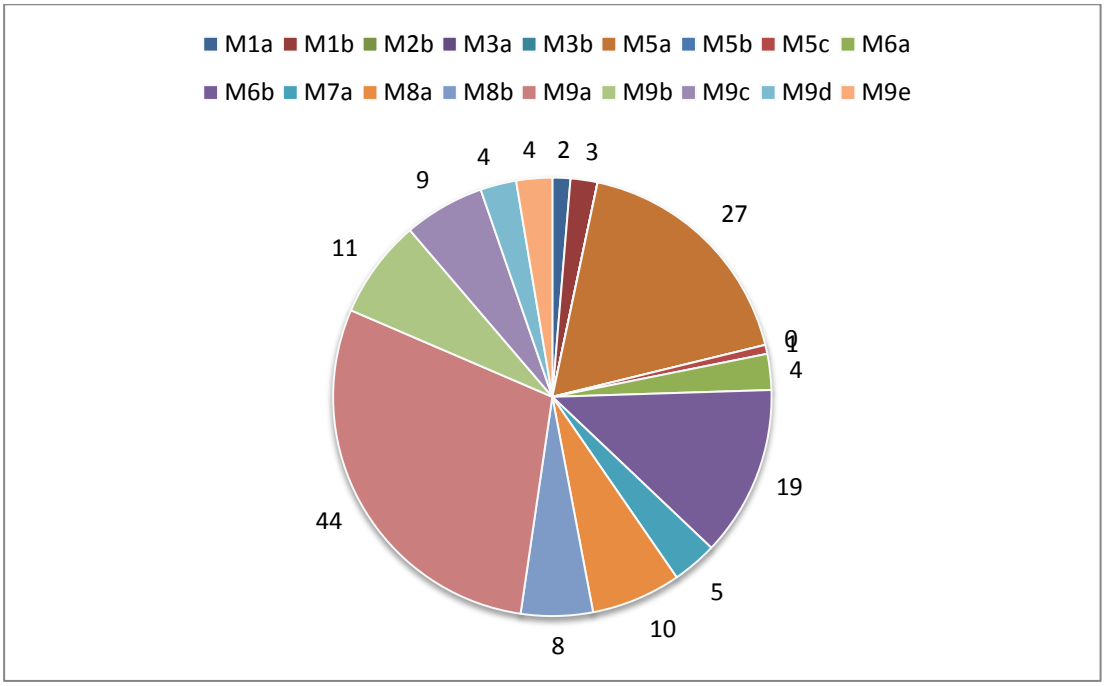


Figure 5.37b. Frequency of Total Belegiš I 3A motifs

Belegiš II (Figures 5.38a and 5.38b)

Belegiš II vessels show a distinct contrast as shown in figure 5.38a. The most prominent motif in zone 3B across the majority of sites is M5a. The exception to this is the site of Vršac – Stari Ludoš, where M5b is more prevalent, and Ilandža, that displays no decoration in zone 3B. Motif M5b also appears at about half the number of sites. M5c only appears at Belegiš – Stojića Gumno. Figure 5.39a

demonstrates that across the sites, M5a is the most widely used motif in zone 3B, with a highest frequency of 85, in comparison to 17 for M5b, the second highest frequency.

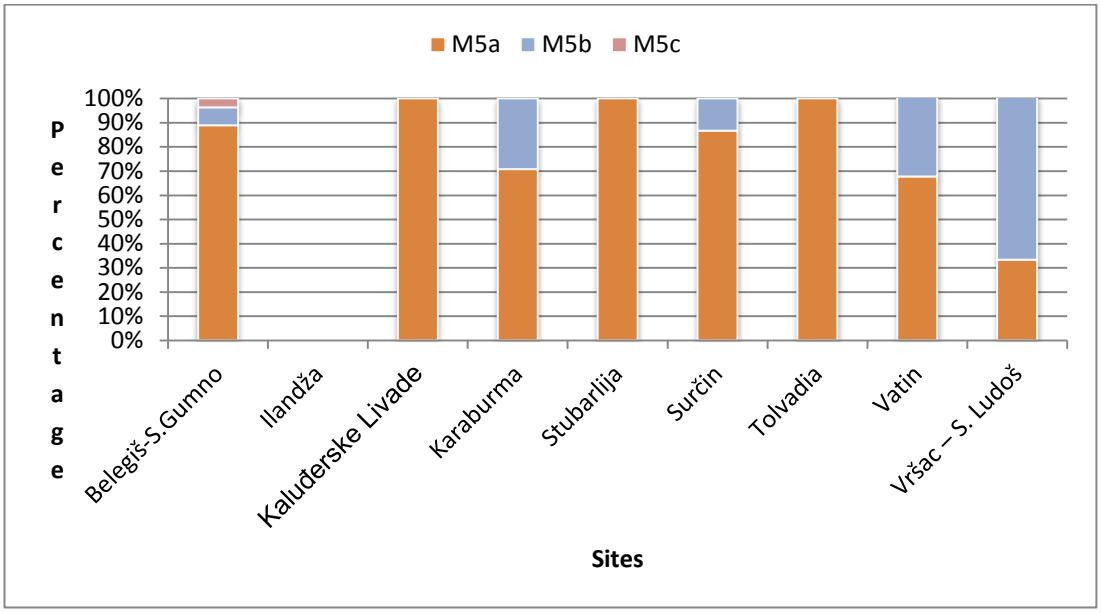


Figure 5.38a. Percentage Frequency of Decorative Motifs in Zone 3B of Belegiš II vessels

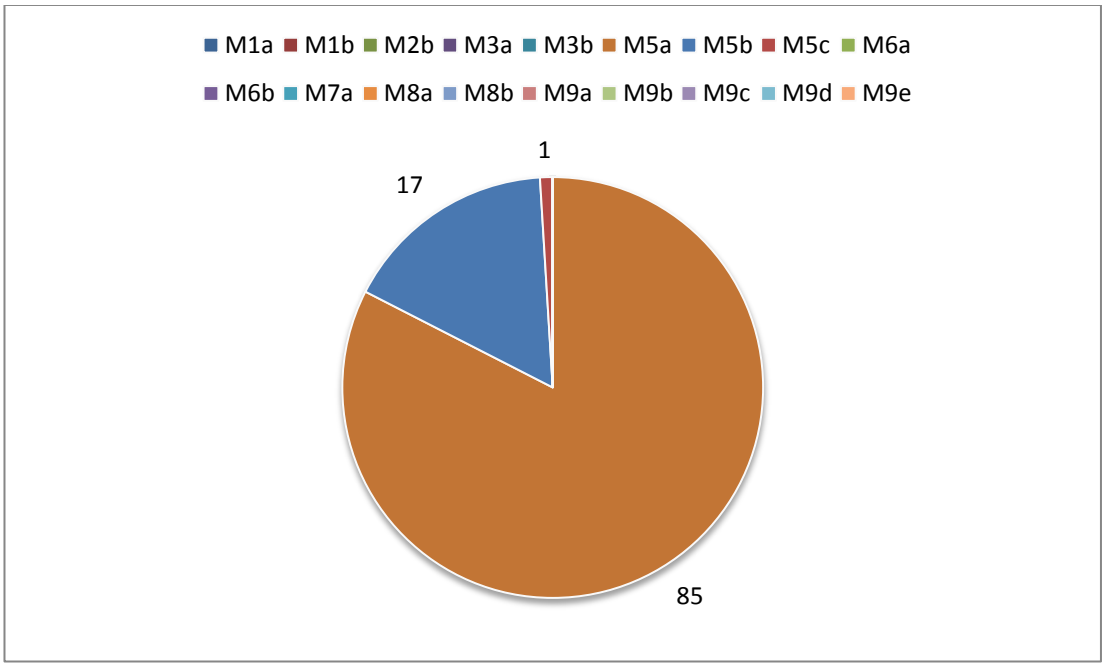


Figure 5.38b. Frequency of Total Belegiš II 3A motifs

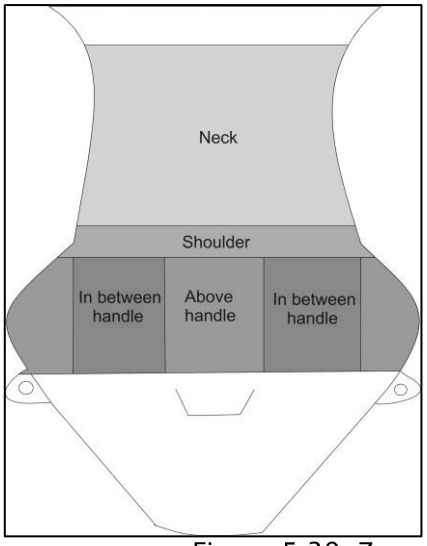
A similar pattern emerges within zone 3B as does in zone 3A; a diverse range of motifs was used on the belly zone for Belegiš I vessels in comparison to Belegiš II that demonstrate a narrowing of motif options.

Tradition in Decorative Motifs

The relatively small range of Belegiš motifs can be visualised as a reservoir of motif options from which makers were drawing from. Yet the evidence shows that the use of these motifs changed over time. Whereas a repertoire of nine motifs were identified for Belegiš I vessels and only three motif types, M1, M2 and M5, were carried over to Belegiš II. A high percentage of Belegiš II urns displayed the use of these motifs implying increased standardisation in decoration.

A commonality that runs through this repertoire of motifs is the use of symmetry. In particular, motif 'families' M5, M6, M7, M8, and M9 each display one vertical line of bilateral symmetry. Therefore it can be concluded that the use of symmetrical motifs was at the heart of both Belegiš I and II motifs. Due to the longevity in this manufacturing principle, it can be argued that this is an aspect of the Belegiš tradition. This is reflected on more thoroughly in section 5.2.

It is evident from the data that also at the centre of the Belegiš urn manufacture was a conceptual understanding of the relationship between motif type and appropriate placement, signalled by the fact that specific motif types occur on particular zones of the vessel. For example, vessel necks only display motif type M1 (Figure 5.39). Decoration placed on the shoulder of vessels is usually of M1, M2, M3 or M4 type. Finally, decoration on the belly of the vessel usually conforms to motifs M1, M2, M3, M5, M6, M7, M8, and M9. This decorative practice underpins the manufacture of both Belegiš I and II urns which consequently indicates another component of the Belegiš tradition.



Neck Motifs
Belegiš I –M1
Belegiš II – M1

Shoulder Motifs
Belegiš I – M1, M2, M3 and M4.
Belegiš II – M2

Belly Motifs
Belegiš I – M1, M2, M3, M5, M6, M7, M8, and M9.
Belegiš II – M5

Figure 5.39. Zones of Vessel and Corresponding Motifs

Throughout the data it is apparent that the vessels analysed share a corpus of appropriate symmetrical motifs and that manufacture was underpinned by a conceptual understanding of the appropriate placement of these motifs. These two

commonalities comprise a facet of the Belegiš tradition. It additionally appears that this decorative tradition changed over time in the way of becoming more fixed. Belegiš II vessels display a move towards standardisation of motif types and particular decorative layouts. Exemplifying this, only motifs M1, M2 and M5 appear on Belegiš II vessels and decorative layouts SL1A, SL2A and SL3B became the most widely used. This change was also accompanied by a shift in decorative methods, as explored below.

Decorative Methods

Given below are the frequencies of decorative methods used in the manufacture of Belegiš I and II vessels. Percentages of total vessels are not given due to the fact that vessels can sometimes display more than one type of decorative method. Data is now also presented site by site to better show frequencies.

Belegiš - Stojića Gumno – Belegiš I (Figure 5.40)

At Belegiš – Stojića Gumno, the highest frequency of Belegiš I urns displayed cord impression (35), 16 vessels showed incisions, 20 vessels have applied decoration and 2 vessels demonstrate use of faceting.

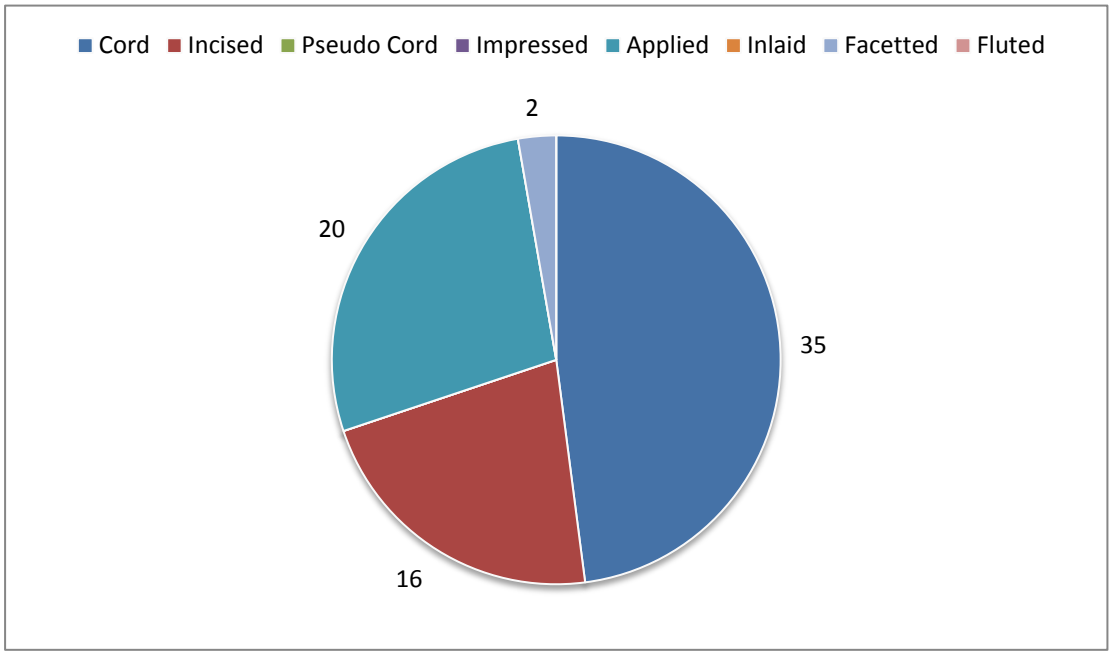


Figure 5.40. Frequency of decorative methods used for Belegiš I vessels at Belegiš – Stojića Gumno

Belegiš - Stojića Gumno – Belegiš II (Figure 5.41)

At Belegiš – Stojića Gumno, 23 Belegiš II urns display applied decoration, the same 23 vessels display fluted decoration. 1 vessel displays impressed decoration.

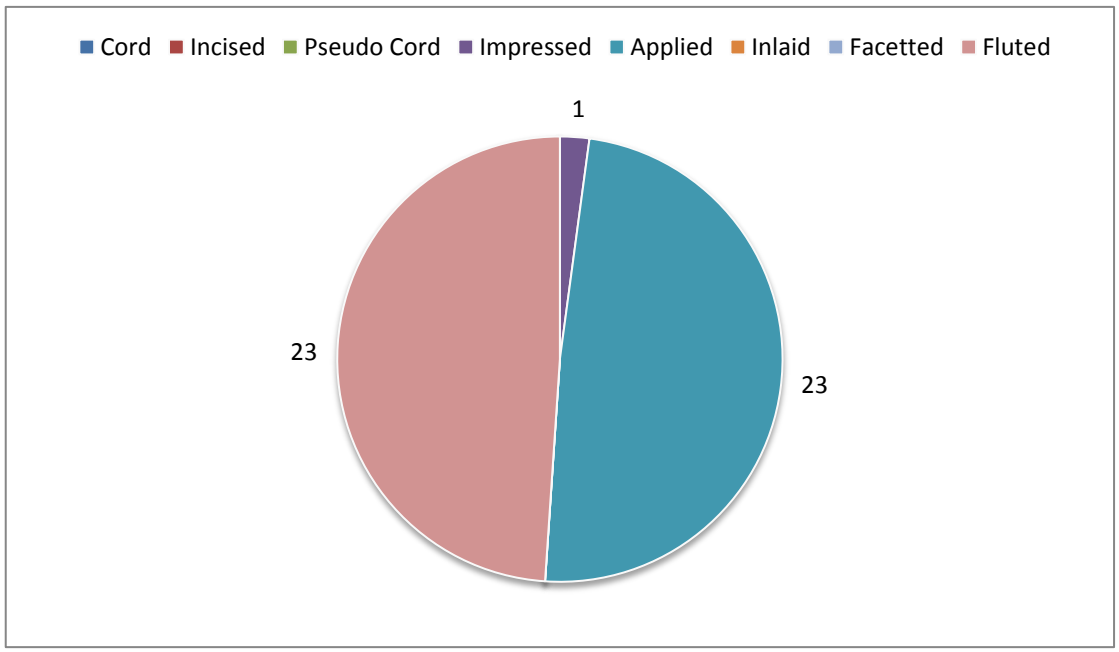


Figure 5.41. Frequency of decorative methods used for Belegiš II vessels at Belegiš – Stojića Gumno

The graphs above show that there was a shift in decoration at Belegiš – Stojića Gumno from Belegiš I to Belegiš II, particularly from cord impressions to fluting. The range of decorative options also decreases between Belegiš I and II.

Ilandža - Belegiš I (Figure 5.42)

At Ilandža, 4 urns display cord decoration, 1 urn displays pseudo cord decoration, 1 urn has impressed decoration and 7 vessels show applied decoration, which is the highest frequency.

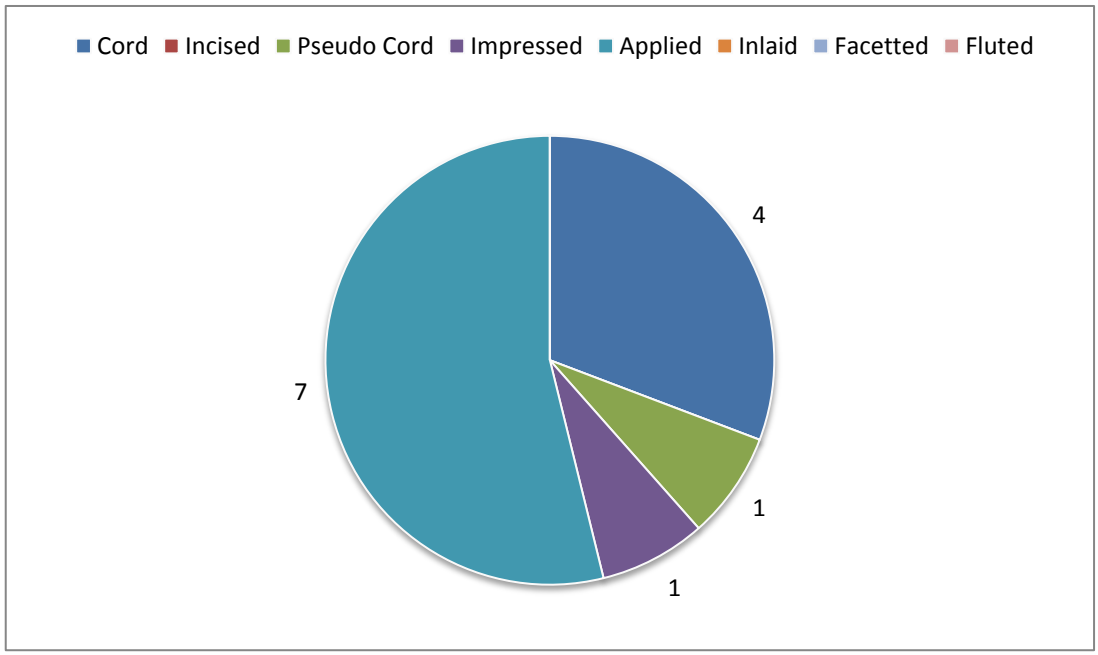


Figure 5.42. Frequency of decorative methods used for Belegiš I vessels at Ilandža

The site of Ilandža had no Belegiš II urns.

Kaluđerske Livade - Belegiš I (Figure 5.43)

At Kaluđerske Livade, the highest frequency of Belegiš I vessels had cord impressions (15), 8 showed incised decoration and 5 displayed applied decoration.

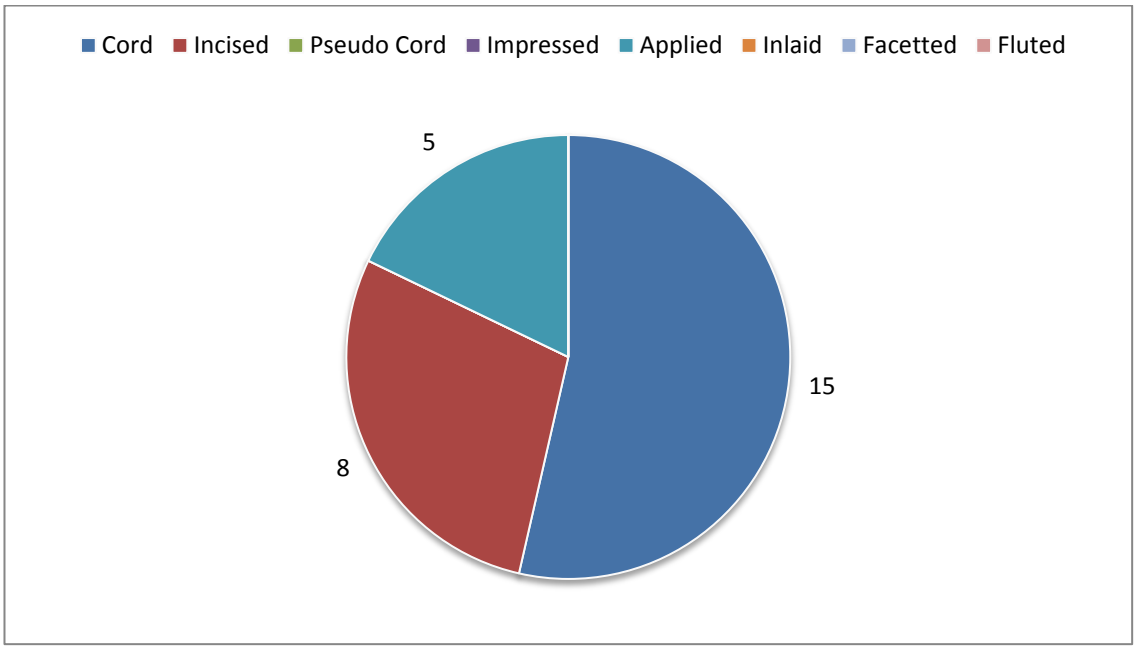


Figure 5.43.Frequency of decorative methods used for Belegiš I vessels at Kaluđerske Livade

Kaluđerske Livade - Belegiš II (Figure 5.44)

At Kaluđerske Livade 8 Belegiš II vessels display applied decoration, 3 show faceting and 5 urns were fluted.

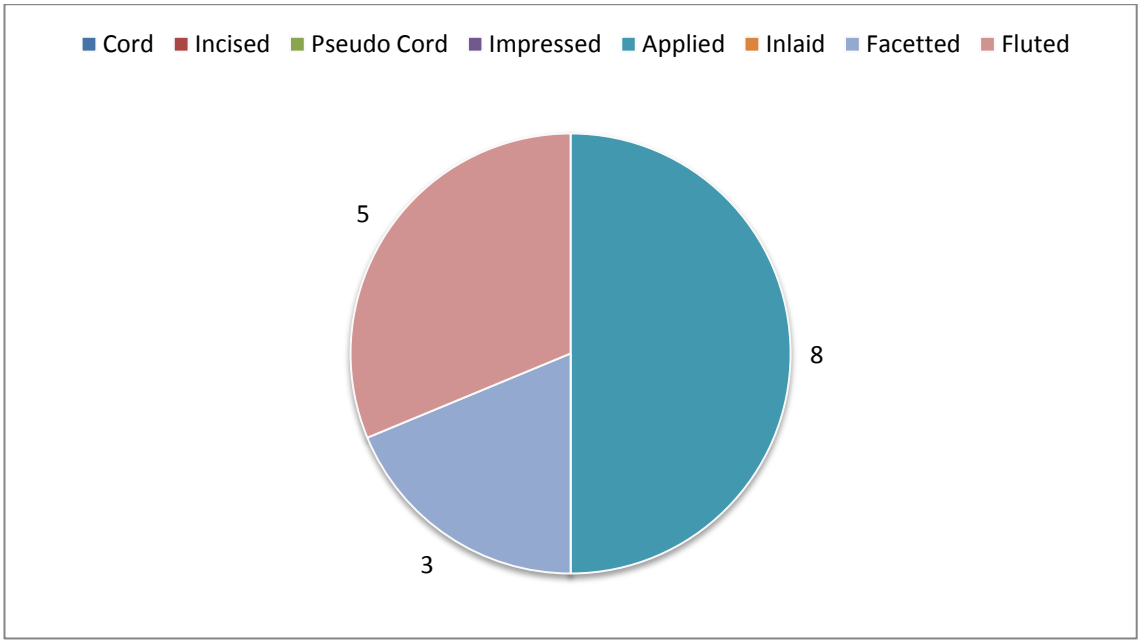


Figure 5.44.Frequency of decorative methods used for Belegiš II vessels at Kaluđerske Livade

The data above highlights a shift in decoration between Belegiš I and II at Kaluđerske Livade, moving from high frequency of cord impressions and incised decoration to a high frequency of fluting and applied decoration.

Karaburma - Belegiš I (Figure 5.45)

At Karaburma, 17 Belegiš I urns have cord impressed decoration, the highest frequency at 55 display incised combing, 1 vessel has impressed decoration, 45 display applied decoration, and 3 vessels exhibit faceting.

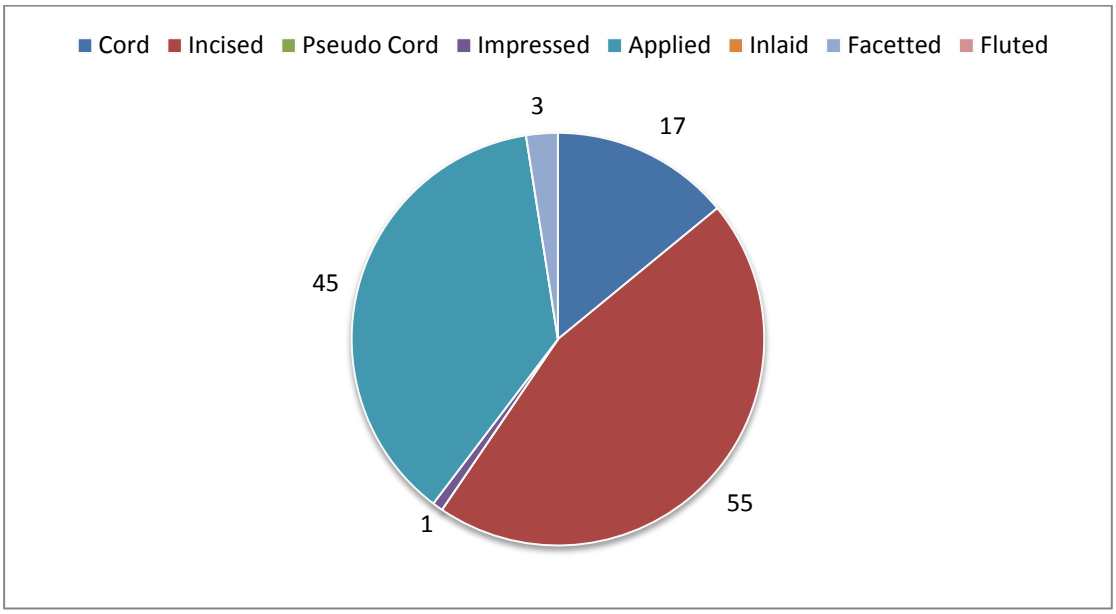


Figure 5.45. Frequency of decorative methods used for Belegiš I vessels at Karaburma

Karaburma - Belegiš II (Figure 5.46)

At Karaburma, 16 Belegiš II vessels display applied decoration, 2 have faceting and 16 show fluted decoration.

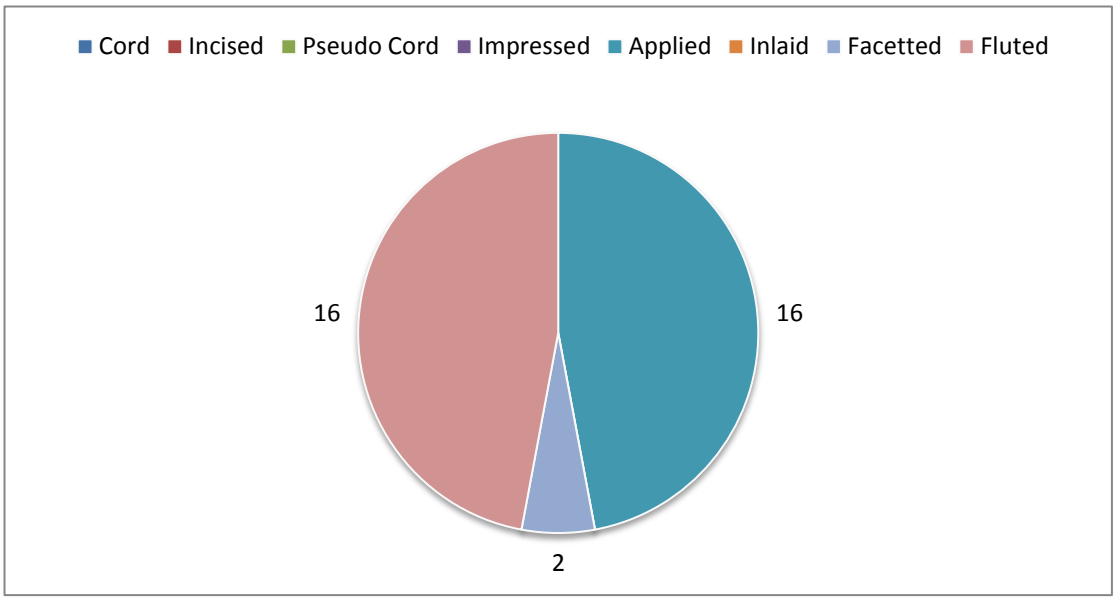


Figure 5.46. Frequency of decorative methods used for Belegiš II vessels at Karaburma

The graphs above show that in the case of Karaburma, a shift in decoration occurs between Belegiš I and II. In Belegiš I, the highest frequency of decoration is incised combing, whereas for Belegiš II it is fluting. Applied decoration remains at a constantly high frequency throughout. The range of decorative options narrows from Belegiš I to II.

Stubarlija – Belegiš I (Figure 5.47)

At Stubarlija, 1 Belegiš I vessel displays cord impressions, one vessel has incised decoration, 5 vessels have applied decoration which is the highest frequency, and one vessel displays inlaid decoration.

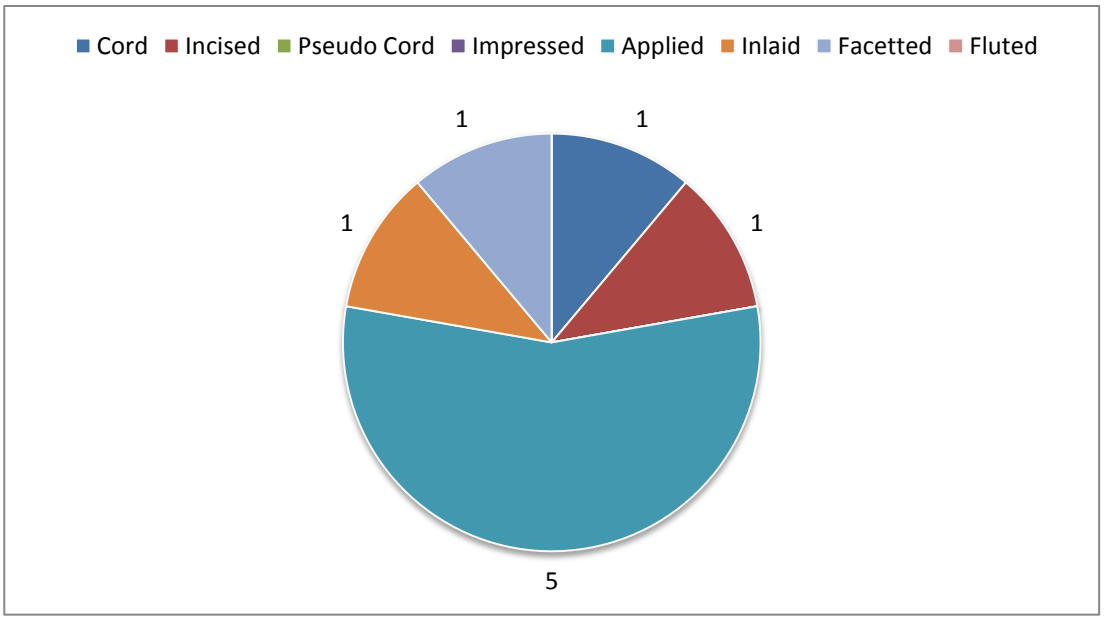


Figure 5.47. Frequency of decorative methods used for Belegiš I vessels at Stubarlija

Stubarlija – Belegiš II (Figure 5.48)

At Stubarlija, 3 Belegiš II vessels display applied decoration and 7 vessels show fluting which is the highest frequency.

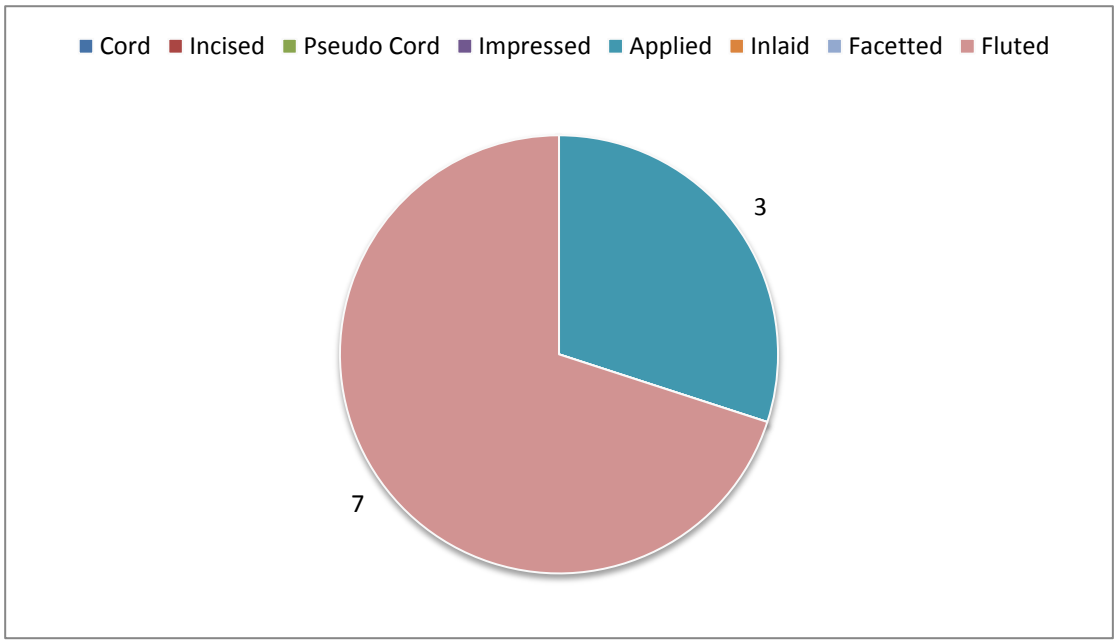


Figure 5.48. Frequency of decorative methods used for Belegiš II vessels at Stubarlija

The data shows that the range of decoration at Stubarlija narrows between Belegiš I and II. Applied decoration is still displays the highest frequency for both groups.

Surčin – Belegiš I (Figure 5.49)

17 Belegiš I urns from Surčin display cord decoration, 15 show incised combing, one vessel exhibits pseudo cord, 3 urns show impressed decoration, 18 have applied decoration, which is the highest frequency, and two vessels display faceting.

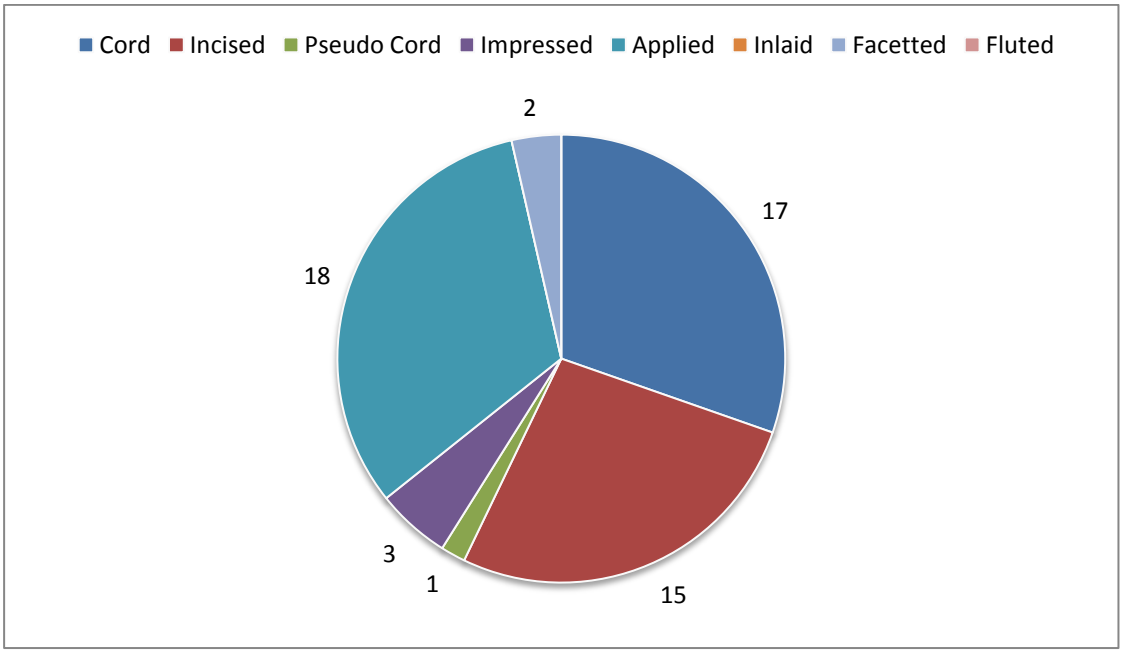


Figure 5.49. Frequency of decorative methods used for Belegiš I vessels at Surčin

Surčin – Belegiš II (Figure 5.50)

At Surčin, 1 Belegiš II vessel displays impressed decoration, 28 have applied decoration, 3 display faceting and 28 display fluting.

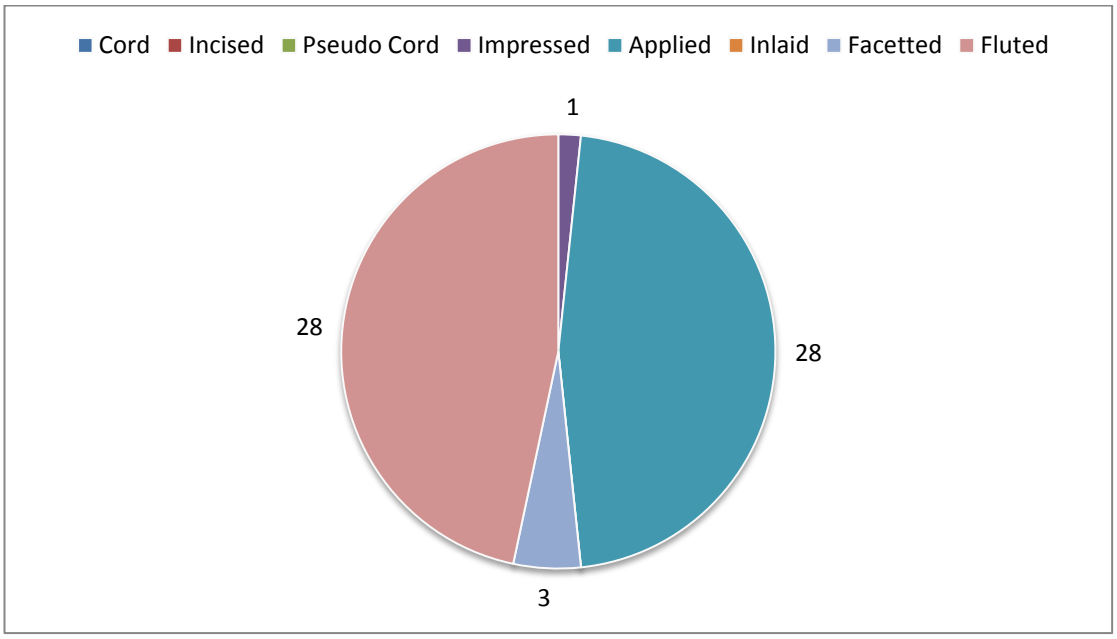


Figure 5.50. Frequency of decorative methods used for Belegiš II vessels at Surčin

The data above shows that the range of decoration at Surčin narrows between Belegiš I and II. Although the frequency of applied decoration is high for both groups, incised decoration also displays a high frequency for Belegiš I, whereas the highest frequency of decoration for Belegiš II vessels was fluting. This suggests that preferences changed over time.

Tolvadia – Belegiš I (Figure 5.51)

At Tolvadia 7 Belegiš vessels show cord decoration which is the highest frequency, 1 vessel displays incised combing, 4 vessels have impressed decoration and 6 have applied decoration.

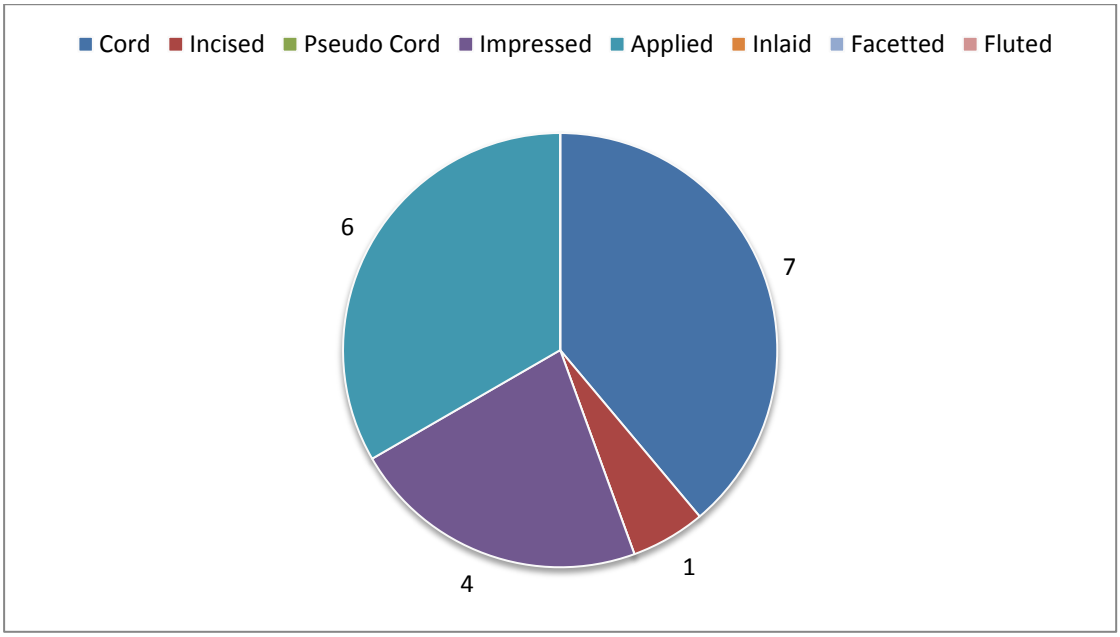


Figure 5.51. Frequency of decorative methods used for Belegiš I vessels at Tolvadia

Tolvadia – Belegiš II (Figure 5.52)

Two Belegiš II vessels from Tolvadia display incised decoration, 1 vessel displays impressions and 2 vessels have applied decoration.

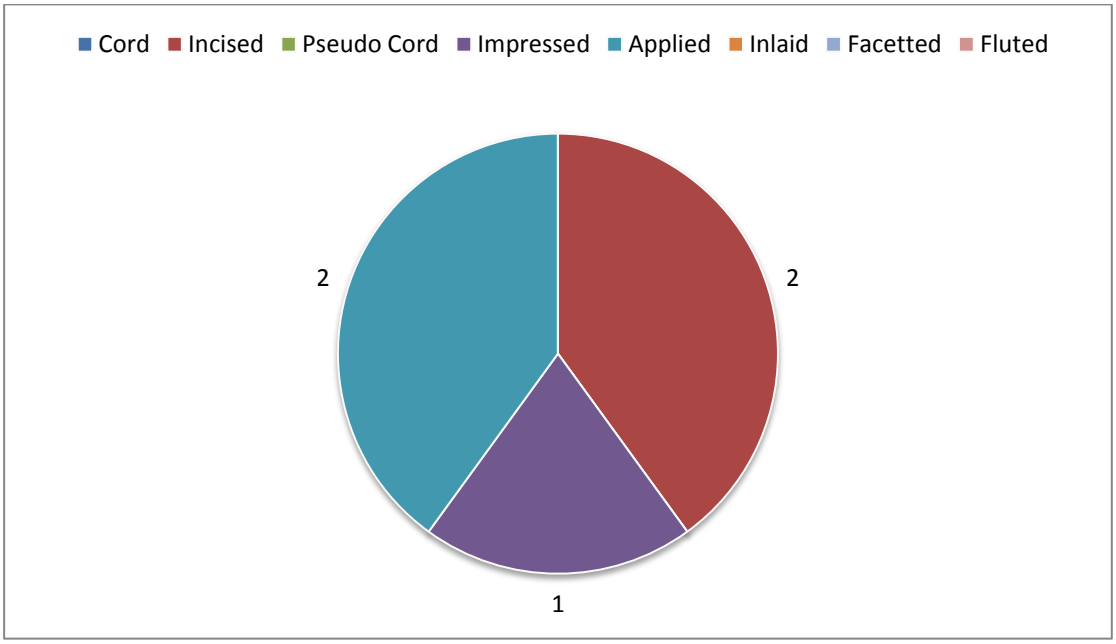


Figure 5.52. Frequency of decorative methods used for Belegiš II vessels at Tolvadia

The above graphs show that in the case of Tolvadia there was only a slight narrowing of decorative options from Belegiš I to II. In contrast to other sites such as Surčin and Karaburma, fluting does not make an appearance on Belegiš II vessels. This site therefore demonstrates more continuation in Belegiš I decorative methods than the other aforementioned sites.

Vatin – Belegiš I (Figure 5.53)

At Vatin, 6 Belegiš I urns display cord impressions, 3 vessels have impressed decoration, 14 exhibit applied decoration which is the highest frequency and 3 show faceting.

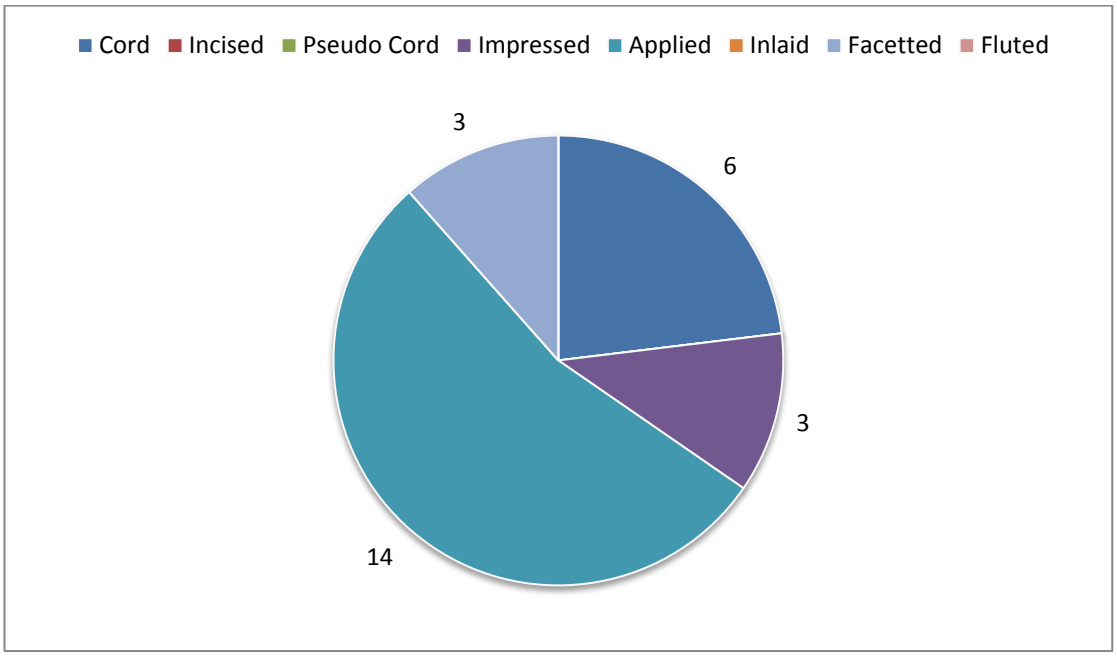


Figure 5.53. Frequency of decorative methods used for Belegiš I vessels at Vatin

Vatin – Belegiš II (Figure 5.54)

For Belegiš II urns from Vatin, 3 vessels display incised combing, one has impressions, 7 have applied decoration which is the highest frequency, 2 display faceting and 5 are fluted.

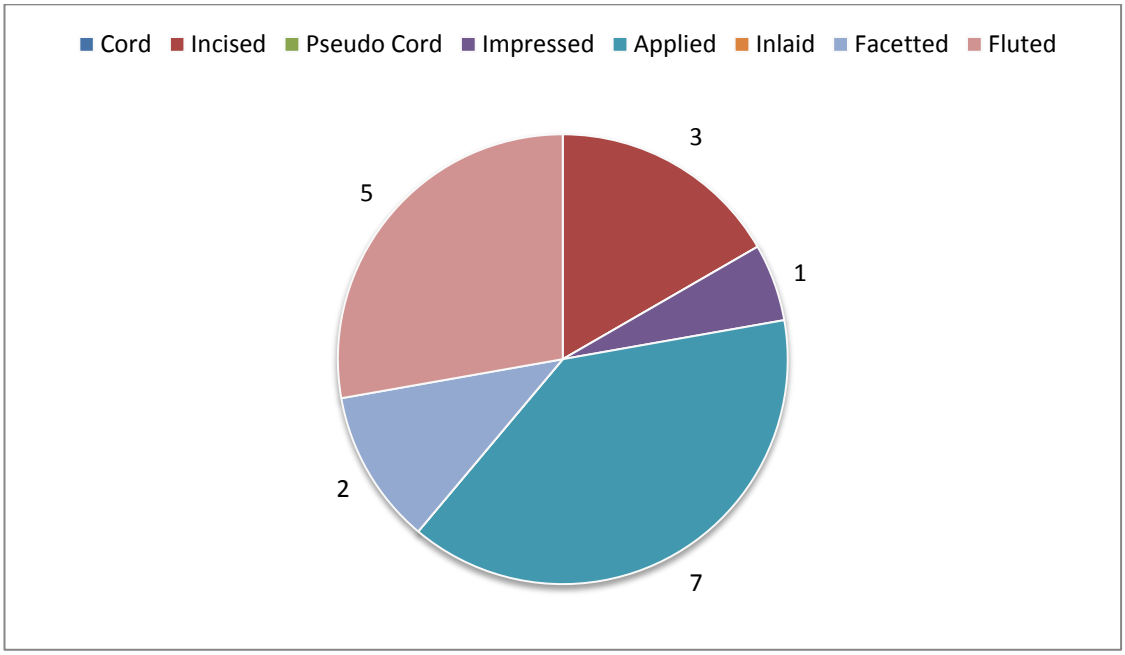


Figure 5.54. Frequency of decorative methods used for Belegiš II vessels at Vatin

The above data shows that both incisions and fluting made an appearance only on Belegiš II vessels. This contrasts to other sites such as Karaburma and Surčin where incised decoration is more associated with Belegiš I vessels. The ways in which decorative methods were drawn on therefore differs across sites.

Vršac – Stari Ludoš – Belegiš I (Figure 5.55)

At Vršac – Stari Ludoš, 4 Belegiš I vessels display cord impressions, 8 vessels have impressed decoration, 17 have applied decoration which is the highest frequency, 4 display faceting and 1 has fluting.

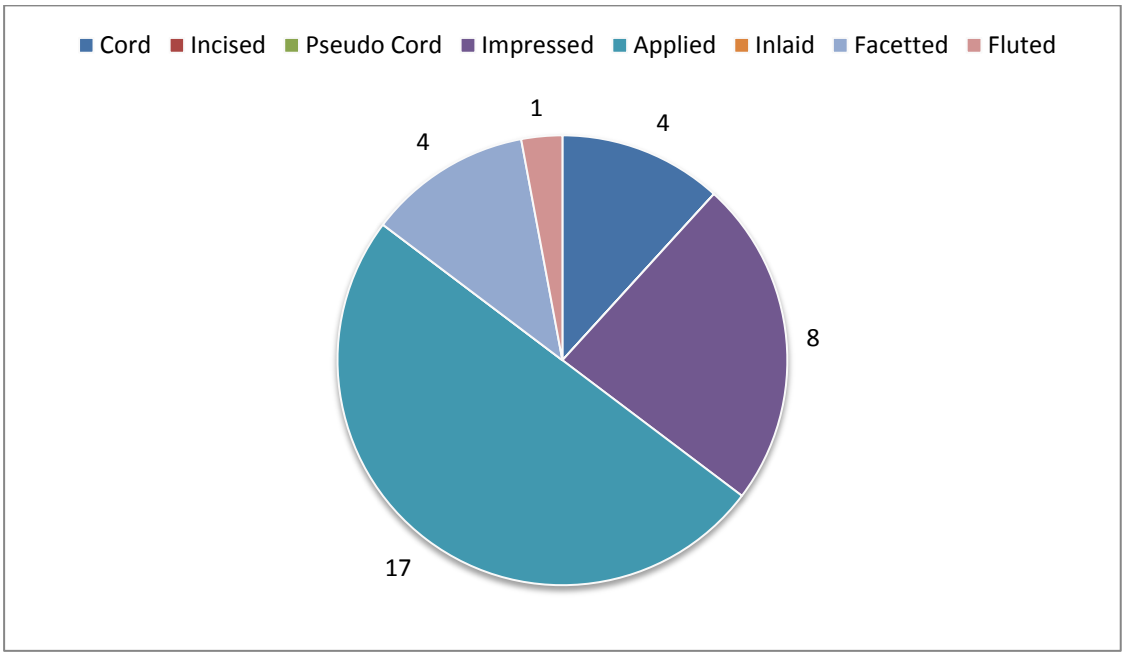


Figure 5.55. Frequency of decorative methods used for Belegiš I vessels at Vršac – Stari Ludoš

Vršac – Stari Ludoš – Belegiš II (Figure 5.56)

At Vršac – Stari Ludoš, 1 Belegiš II vessel displays incised decoration, 4 show applied decoration which is the highest frequency and 3 have fluting.

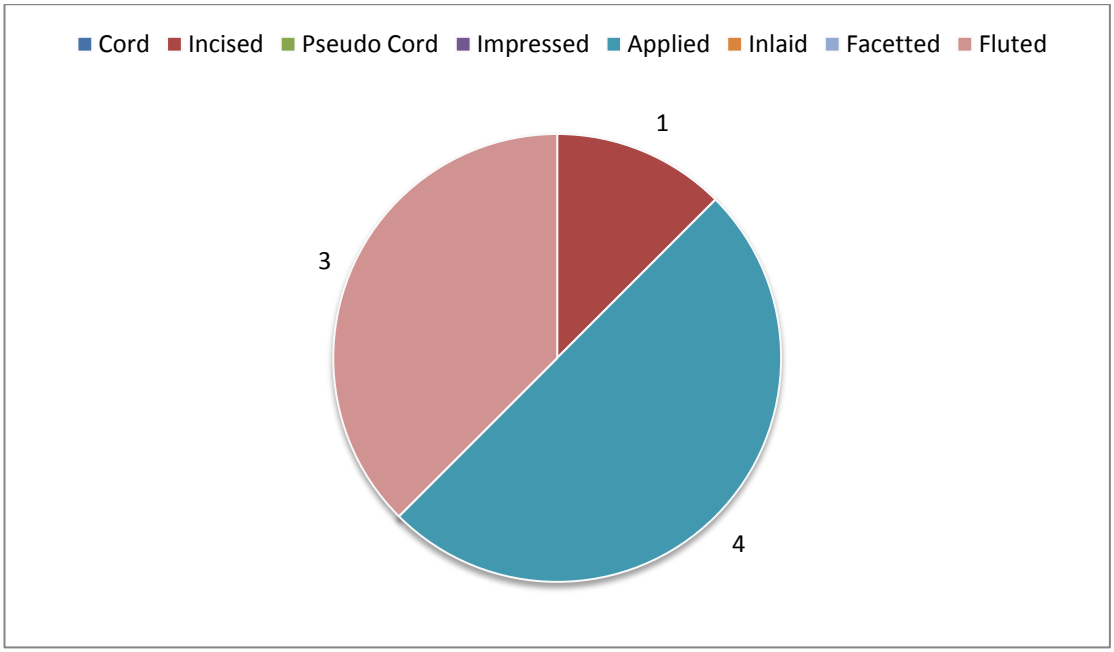


Figure 5.56. Frequency of decorative methods used for Belegiš II vessels at Vršac – Stari Ludoš

The graphs above highlight a narrowing down of the range of decorative methods. However, in contrast to all other sites that only display fluting on Belegiš II urns, Belegiš I one vessel at Vršac – Stari Ludoš displays fluting.

Tradition in Decorative Techniques

Figures 5.40 to 5.56 show that there was a repertoire of decorative methods used by Belegiš makers. For Belegiš I vessels, these comprise of predominantly small applied bosses, incised combing, cord impressions, impressed dots and sometimes facetted decoration. On the whole, this range decreased from Belegiš I to II but did so it site specific ways. Exemplifying this, sites such as Surčin and Karaburma demonstrate the introduction of fluting for Belegiš II vessels. Yet at the site of Vršac – Stari Ludoš, the fluting technique also appears on a Belegiš I vessel.

The narrowing of decorative techniques in Belegiš II reflects a move towards three dimensional types of decoration. Belegiš II bosses are bigger and more exaggerated than their Belegiš I predecessors. In addition, the faceting and fluting techniques themselves give more three dimensional effects in comparison to combing and cord impressions (Figures 5.57, 5.58 and 5.59). This shift parallels the decrease in motif options used by Belegiš II makers. This suggests that Belegiš II represents a phase of manufacture where a fixing of methods occurred. This is explored in more detail in section 5.2.



Figure 5.57. Vessel 10387 from Vatin displaying facetted decoration



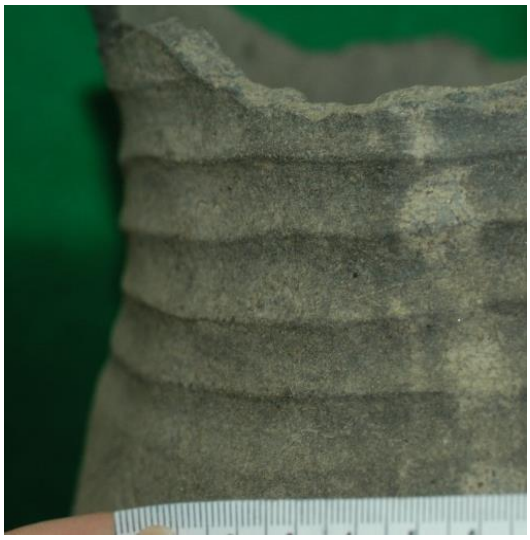


Figure 5.58 and 5.59. Examples of exaggerated decoration.

5.1.5 Surface Finish

All vessels, regardless of whether they are classed as Belegiš I or II, display three types of surface finish; matte, semi-light reflective, and light reflective (Figures 5.60a, 5.60b and 5.60c). Matte finishes were produced with smoothing methods, utilising a tool to create a smooth surface. Semi-light reflective surfaces were created through light burnishing, a method that involves rubbing a tool across the surface of the vessel when it is at the leather hard stage. More lustrous and therefore light reflective finishes were the result of using a harder burnishing method. The technical traces on the vessels indicate that each surface quality was created by working in a vertical or horizontal motion. Presented below are the frequencies of surface finish and direction for both the interior and the exterior of Belegiš I and II vessels.



Figure 5.60a, 5.60b and 5.60c. Examples of matte surface finish (vessel 20753 from Surčin), semi – light reflective surface finish (vessel 20890 from Surčin) and light reflective (vessel 20688 from Surčin).

Interior Surface Finish

Belegiš I (Figures 5.61a and 5.61b)

Figure 5.61a highlights that the range of interior surface finishes was not the same across all sites. Horizontal smooth finishing was the most prevalent, appearing at all sites in noticeably high frequencies. Vertical smoothing appears at the sites of Ilandža and Surčin in comparatively low frequencies. Horizontal light burnishing appears on the sites of Stubarlija, Vatin and Vršac – Stari Ludoš, again at low frequencies. Stubarlija is the only site to have vessels that display vertical light burnish on the interior. Vatin and Vršac – Stari Ludoš display examples of interior horizontal medium burnish, once more in low frequencies. Figure 5.61b highlights that across all sites, the vast majority of vessels have horizontally smooth interiors.

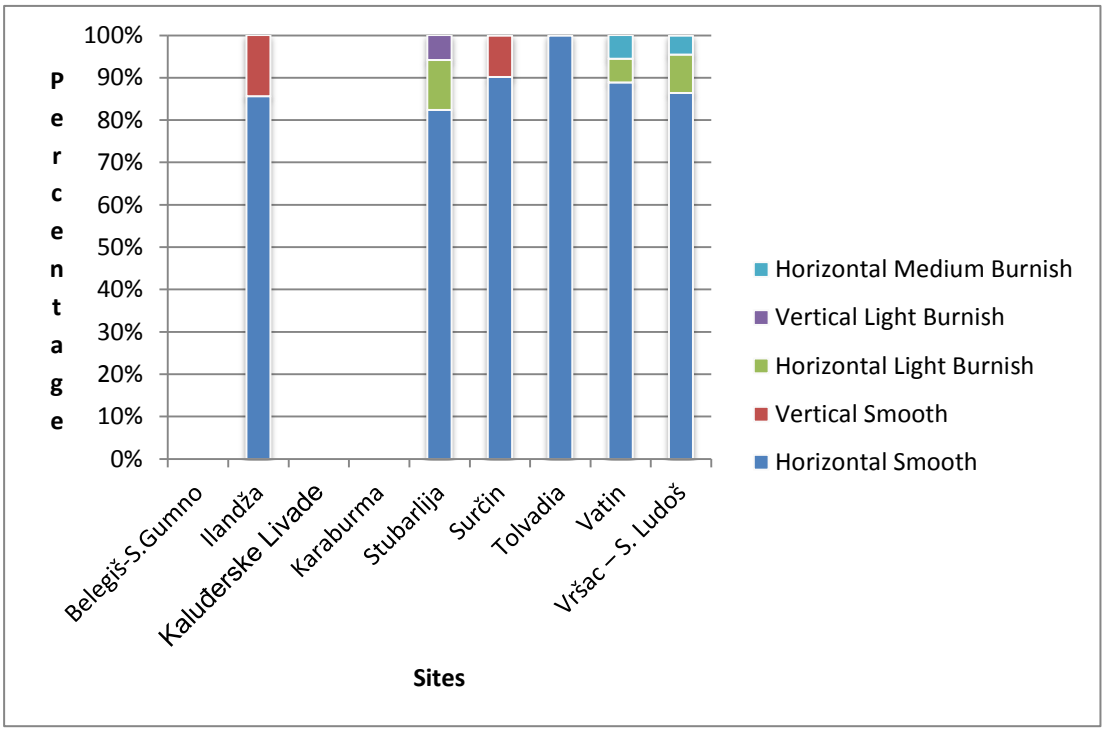


Figure 5.61a. Percentage Frequency of Belegiš I Interior Surface Finish

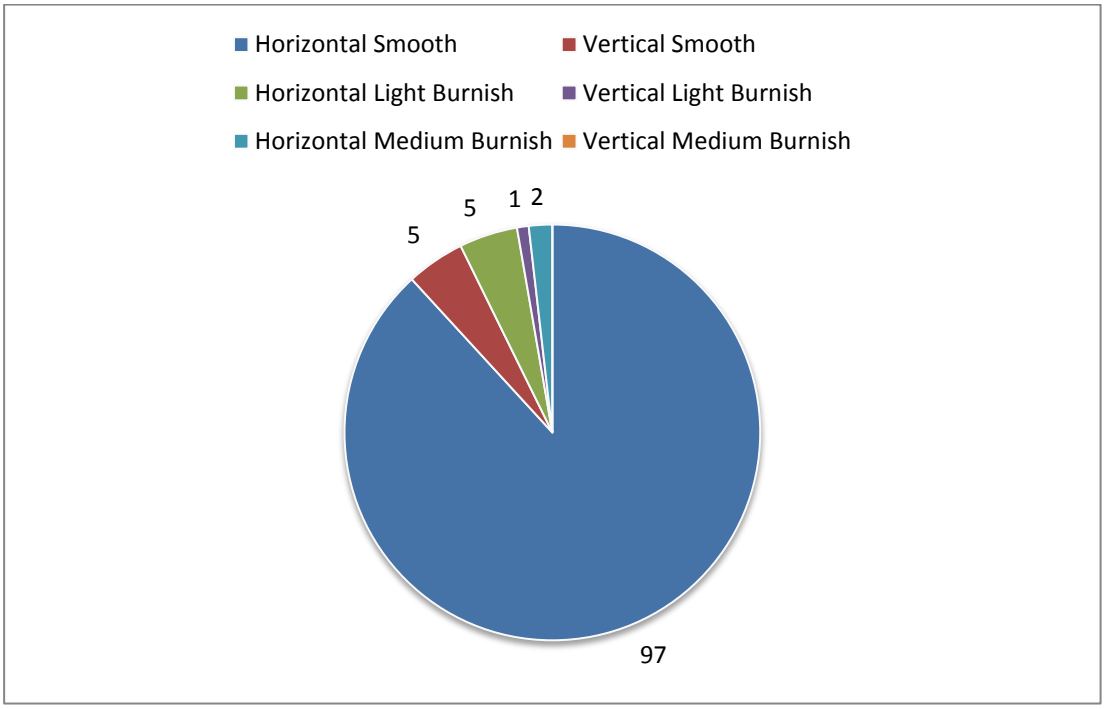


Figure 5.61b. Frequency of Total Belegiš I Interior Surface Finish

Belegiš II (Figure 5.62a and 5.62b)

For Belegiš II, the picture is fairly similar. Again, figure 5.62a shows that interior horizontal smoothing is the most predominant, featuring on vessels from all of the sites at a high frequency. Horizontal light burnishing makes an appearance at Surčin in a very small frequency, and also Vatin and Vršac – Stari Ludoš. A low frequency of vertically smooth interior makes an appearance at Surčin, as does horizontal

medium burnishing at the site of Vatin. Figure 5.62b shows a slight proportional increase in vertical smoothing, horizontal light burnishing and horizontal medium burnishing.

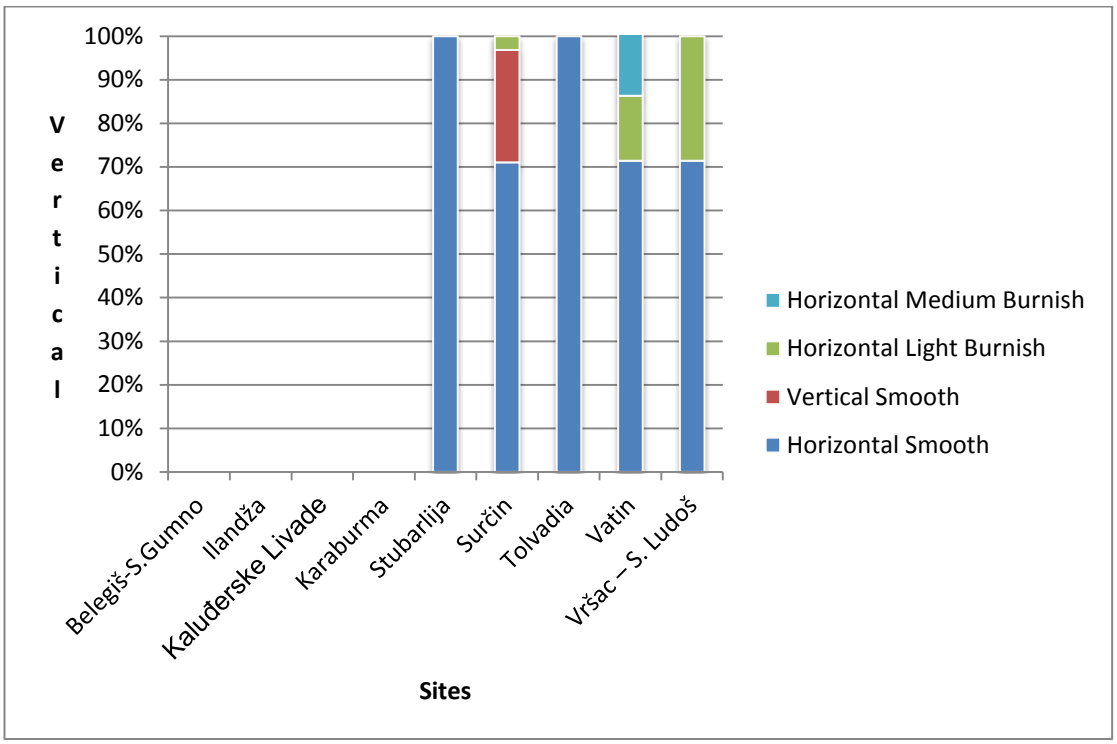


Figure 5.62a. Percentage Frequency of Belegiš II Interior Surface Finish

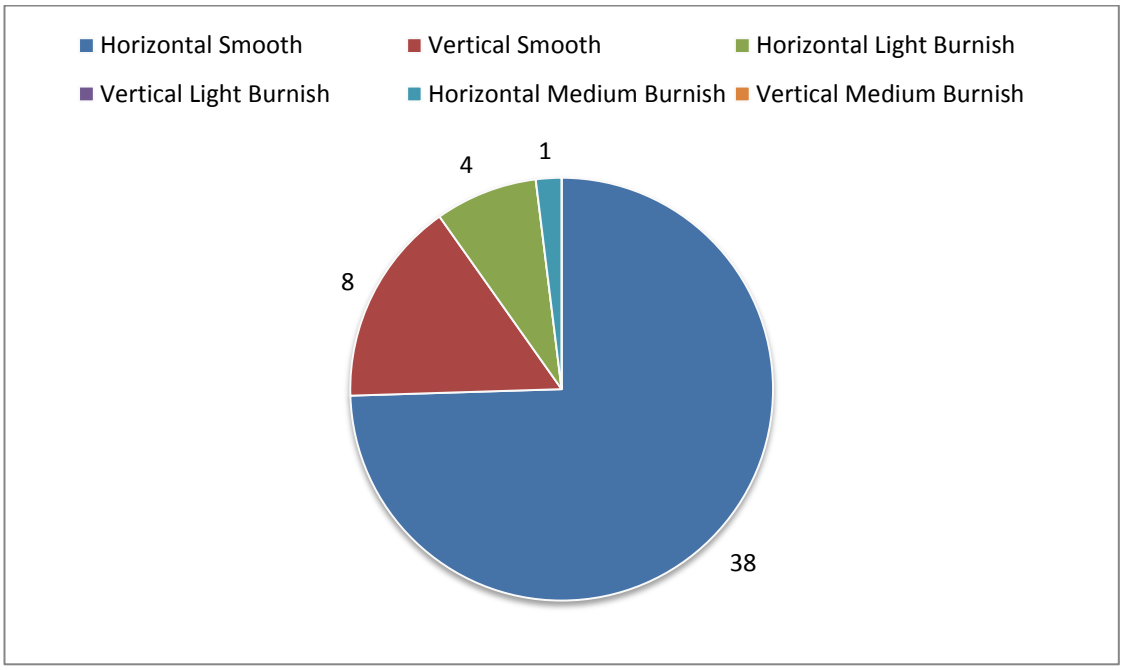


Figure 5.62b. Frequency of Total Belegiš II Interior Surface Finish

The data demonstrates a range of interior surface finish. The shift in range between Belegiš I and II is site specific. As an example, the site of Stubarlija shows a decrease in the range of surface finish between Belegiš I and II. Surčin however shows an increase. This means that although the tradition sits within the repertoire of surface treatments, it was drawn from in in different ways at different sites.

Exterior Surface Finish

Belegiš I (Figures 5.63a and 5.63b)

Figure 5.63a shows that again the range on exterior surface finishes is not exactly the same across all sites. Horizontal smoothing occurs on vessels on all sites, and is the highest frequency for each. Horizontal burnishing appears on a small percentage of vessels from Ilandža, Stubarlija, Surčin, Tolvadia and Vršac – Stari Ludoš. Exterior vertical light burnish appears on a very small percentage of vessels from Surčin and well as Vatin. Exterior horizontal medium burnish appears on a small percentage of vessels from Stubarlija, Vatin and Vršac – Stari Ludoš. Overall, as shown in figure 5.63b, the majority of vessels across sites display horizontal smoothing on the exterior.

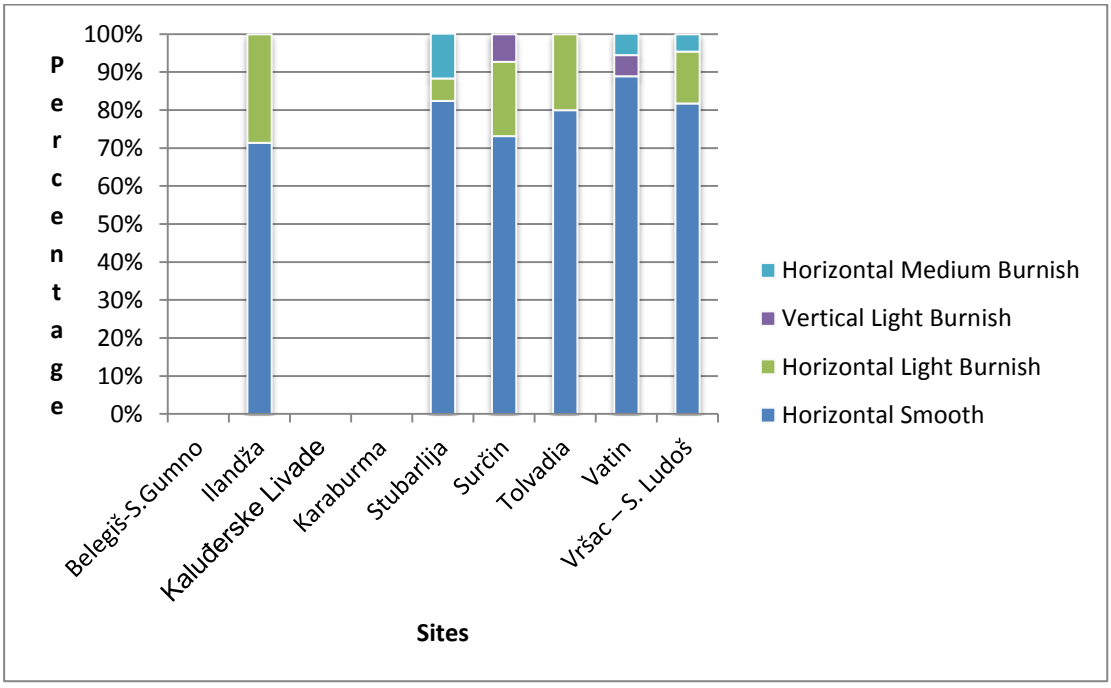


Figure 5.63a. Percentage Frequency of Belegiš I Exterior Surface Finish

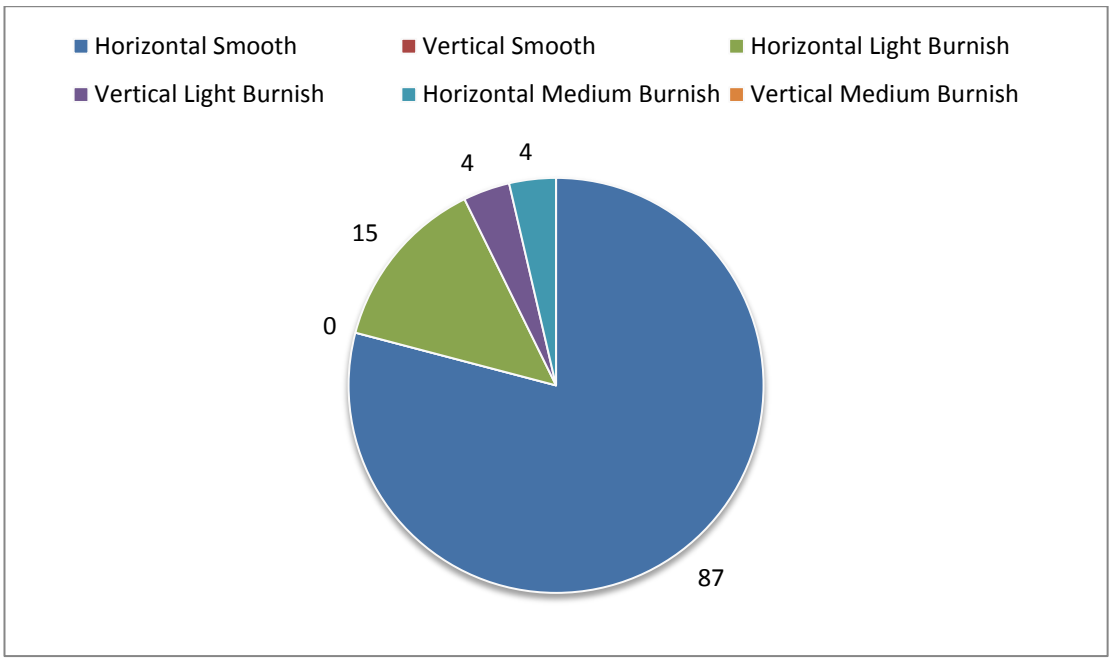


Figure 5.63b. Frequency of Total Belegiš I Exterior Surface Finish

Belegiš II (Figures 5.64a and 5.64b)

Figure 5.64a indicates that the preference for horizontally smooth exteriors continues for Belegiš II at all sites, apart from Surčin. Here, we can see an influx of vertical light burnish and vertical medium burnish, setting Surčin apart from, the other sites. The range across the sites is therefore once again not exactly the same. Horizontal light burnishing appears in small percentages at Vatin and Vršac – Stari Ludoš. However, figure 5.64b shows that although horizontal smoothing on the exterior is still the highest frequency, it is less so than in Belegiš I group.

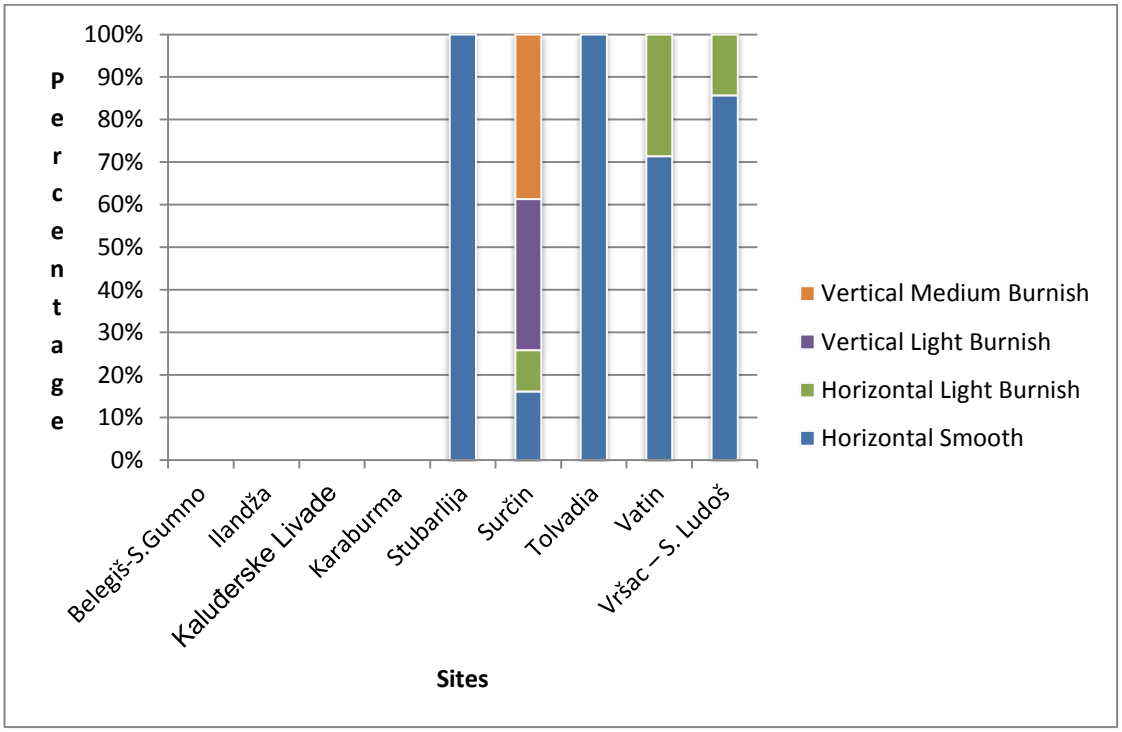


Figure 5.64a. Percentage Frequency of Belegiš II Exterior Surface Finish

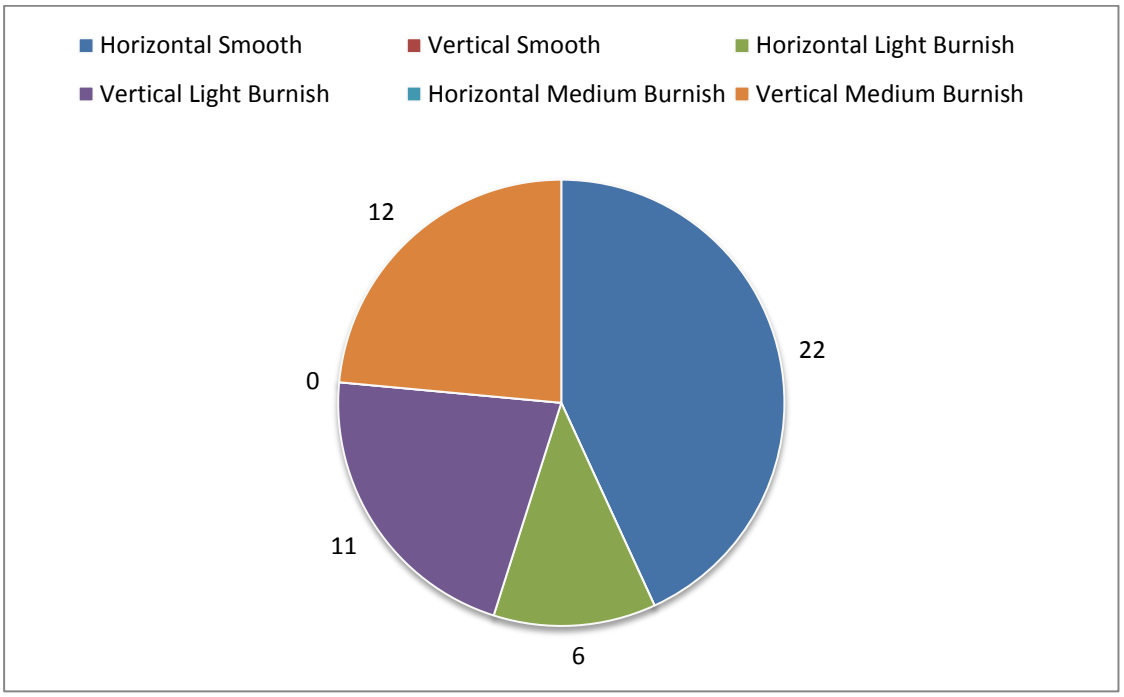


Figure 5.64b. Frequency of Total Belegiš II Exterior Surface Finish

The data shows that with the exception of Surčin, the preference for smoothed vessel exteriors that was administered on a horizontal plane remains constant throughout both Belegiš I and II manufacture. The data also shows that there is a range in surface finishes shared by makers but these options change from Belegiš I and II depending at which site the vessels come from. Demonstrating this, Stubarlija, Vatin and Vršac – Stari Ludoš show a decrease in range from Belegiš I to II but Surčin shows an increase.

Tradition in Surface Finish

The data shows that there was a small range of surface finishes shared by the sites but that this was drawn upon in site specific ways. Tradition therefore sits within this repertoire. The similar ranges in surface finishing techniques occur across sites are suggestive of a regional distribution of technical knowledge; the principles of smoothing and burnishing are shared across the dataset. Yet there are variations in the ways in which they were administered and this speaks more of differences in practice which is discussed in greater detail in Chapter 6.

5.1.6 Surface Colour

Given below is a description of frequencies of interior and exterior surface colour for Belegiš I and II vessels.

Interior Colour

Belegiš I (figures 5.65a and 5.65b)

Figure 5.65a shows that across all sites, the dominant interior colour is brown, as indicated by the high frequencies. Grey interiors feature on a small number of vessels from Ilandža, Surčin and Vršac – Stari Ludoš. Stubarlija also has examples of vessels with black interiors and orange interiors, and is the only site to have vessels that display these colours on the interior. Figure 5.65b indicates that across all the sites, an overwhelming majority display brown interiors.

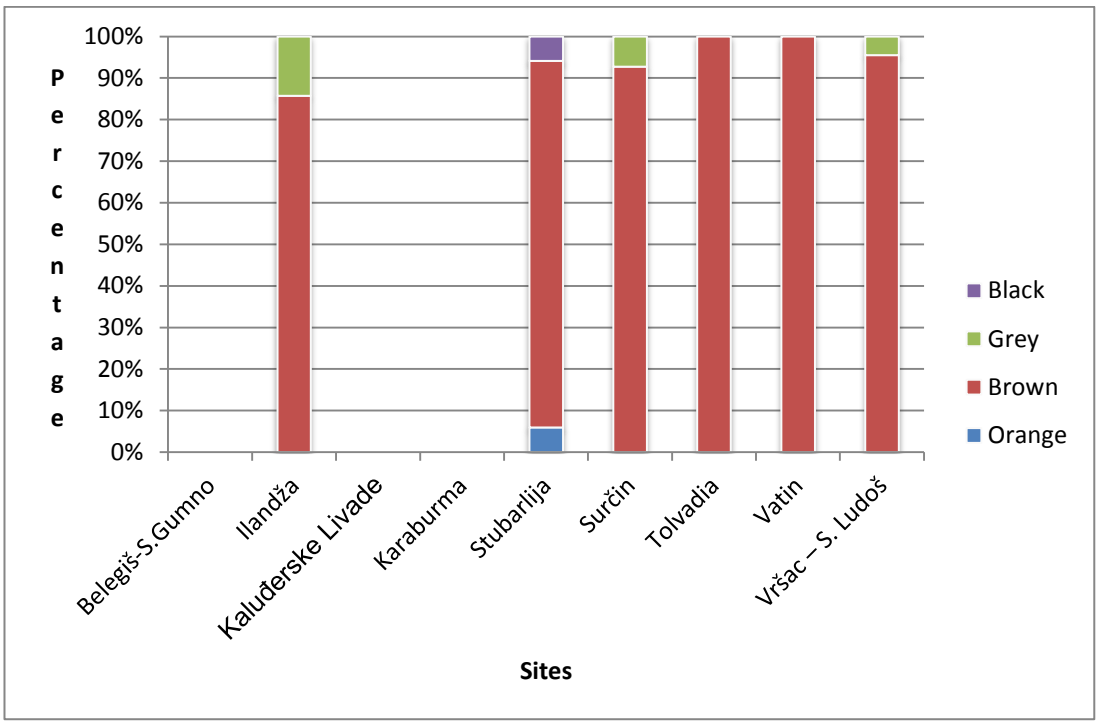


Figure 5.65a. Percentage Frequency of Belegiš I Interior Surface Colour

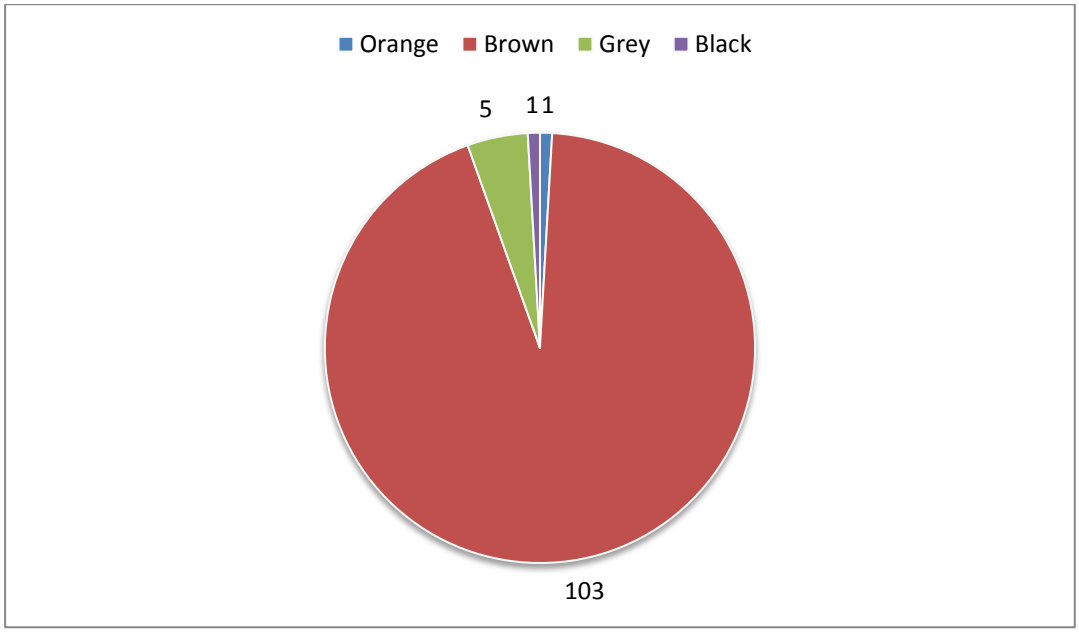


Figure 5.65b. Frequency of Total Belegiš I Interior Colour

Belegiš II (Figures 5.66a and 5.66b)

Figure 5.66a shows that for most of the sites, a brown interior is still the most dominant. However that is not the case for the site of Surčin, where an influx of black and grey interiors occurs. Vessels with black interiors also occur at Stubarlija. Grey interiors feature on a small number of vessels at Vatin and Vršac – Stari Ludoš. Figure 5.66b highlights that although still the highest frequency, brown interiors are less dominant across all sites for Belegiš II group.

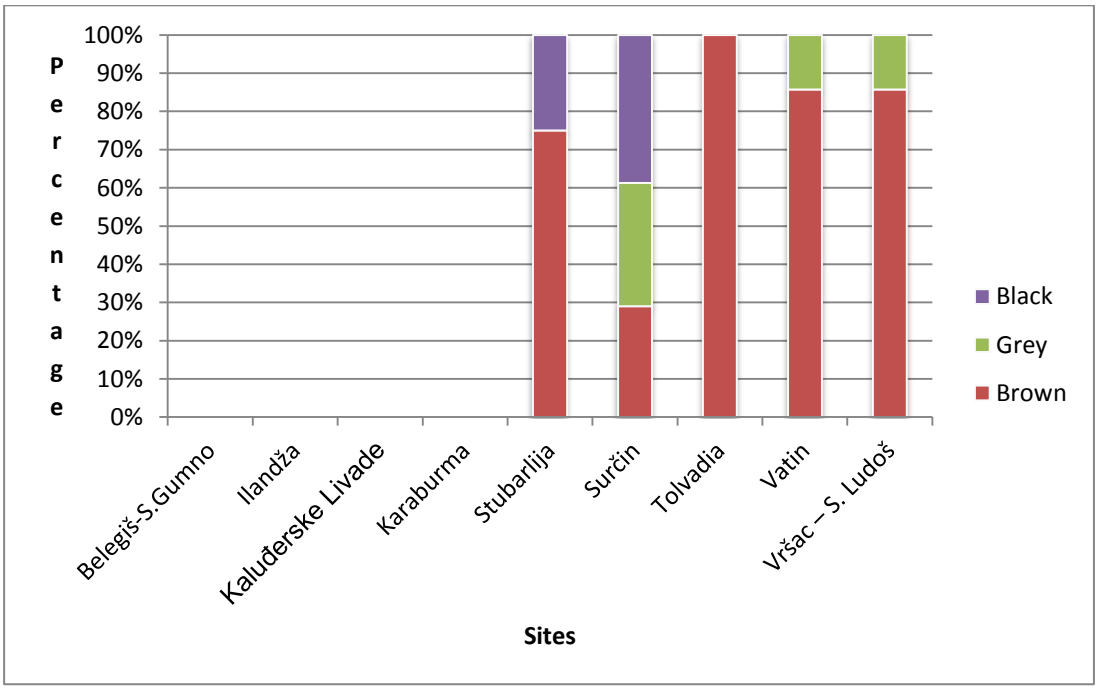


Figure 5.66a. Percentage Frequency of Belegiš II Interior Surface Colour

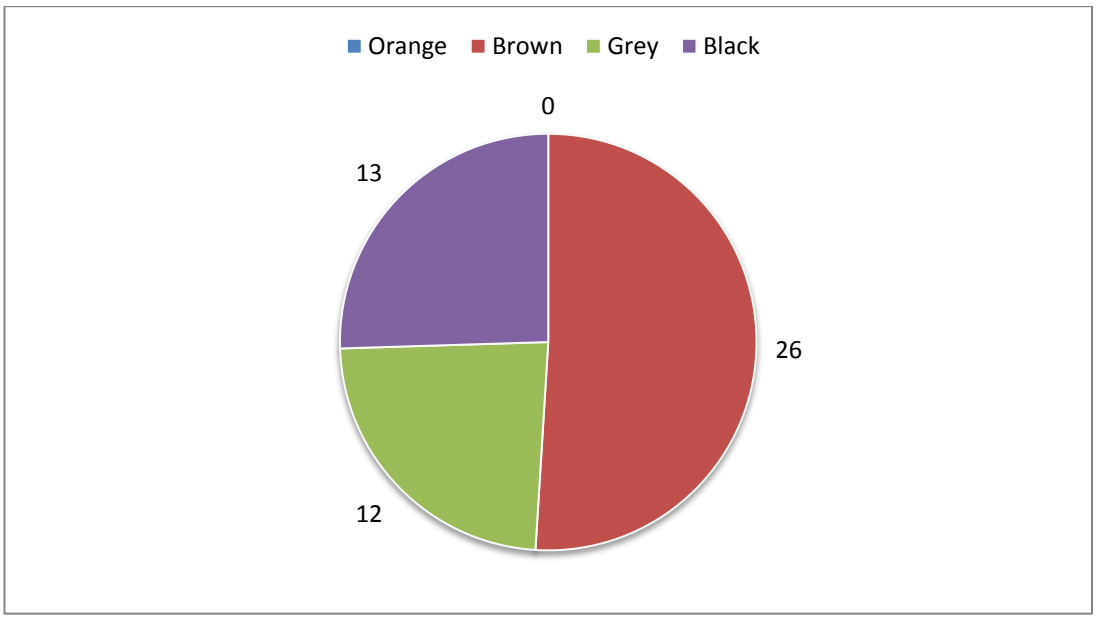


Figure 5.66b. Frequency of Total Belegiš II Interior Colour

The data shows that once again apart from the site of Surčin, both Belegiš I and II type vessels have a tendency to display brown interiors although there is a range in colours. This range shifts from Belegiš I to II in site specific ways. At Stubarlija there is a decrease in range whereas at Surčin and Vatin the range increases from Belegiš I to II.

Exterior Colour

Belegiš I (Figures 5.67a and 5.67b)

Figure 5.67a highlights that at all sites, the highest proportion of Belegiš I vessels display a brown exterior. Orange exteriors feature in small frequencies at Stubarlija and Vršac – Stari Ludoš, a small percentage of vessels display grey exteriors at Ilandža and Surčin, and a small number have black exteriors from Stubarlija and Vršac – Stari Ludoš. Figure 5.67b shows that the overwhelming majority of vessels across all sites have brown exteriors.

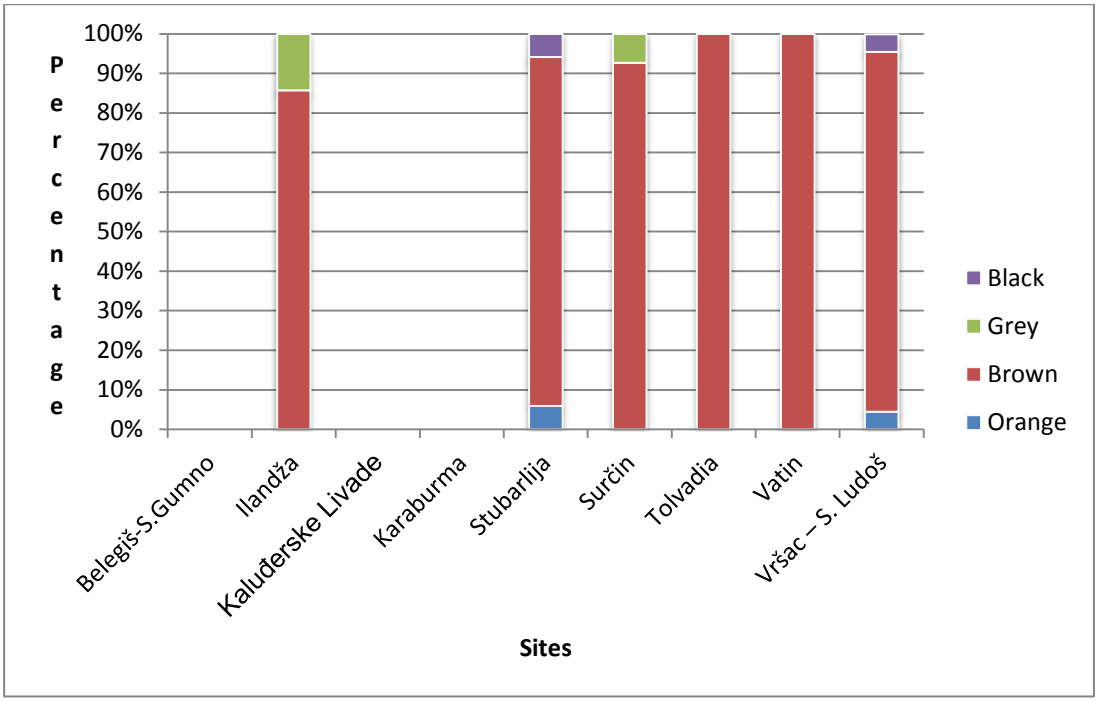


Figure 5.67a. Percentage Frequency of Belegiš I Exterior Surface Colour

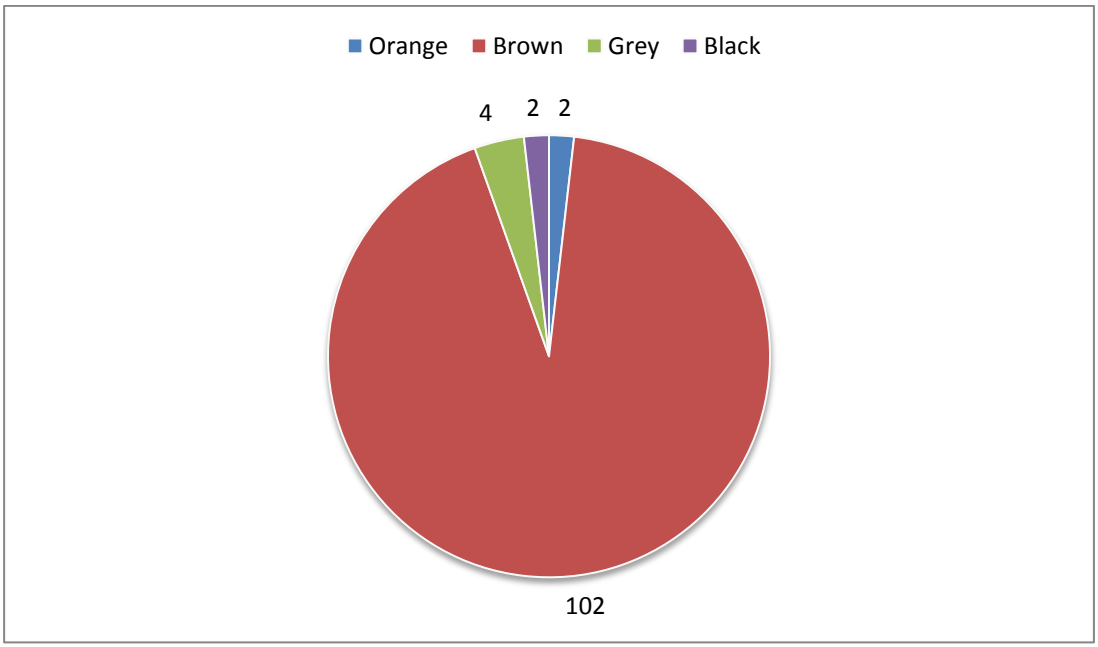


Figure 5.67b. Frequency of Total Belegiš I Exterior Colour

Belegiš II (Figures 5.68a and 5.68b)

Figure 5.68a paints a similar picture. All sites have vessels that display brown exteriors, and for the sites of Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš, this is the predominant colour. For Surčin however, although there are vessels that have brown exteriors, the preference is for grey exteriors. Grey exteriors also feature at Vatin, as do black exteriors. Figure 5.68b shows that although overall across the sites, there is still a preference for brown exteriors, it is not as predominant as is the case in the Belegiš I group.

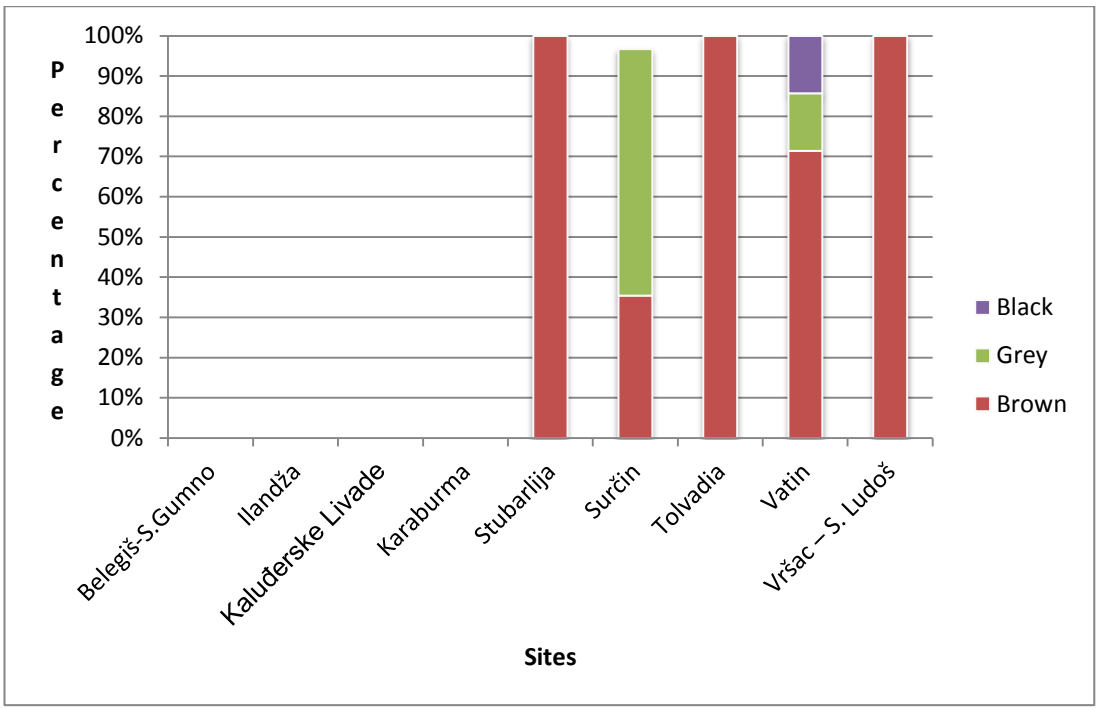


Figure 5.68a. Percentage Frequency of Belegiš II Exterior Surface Colour

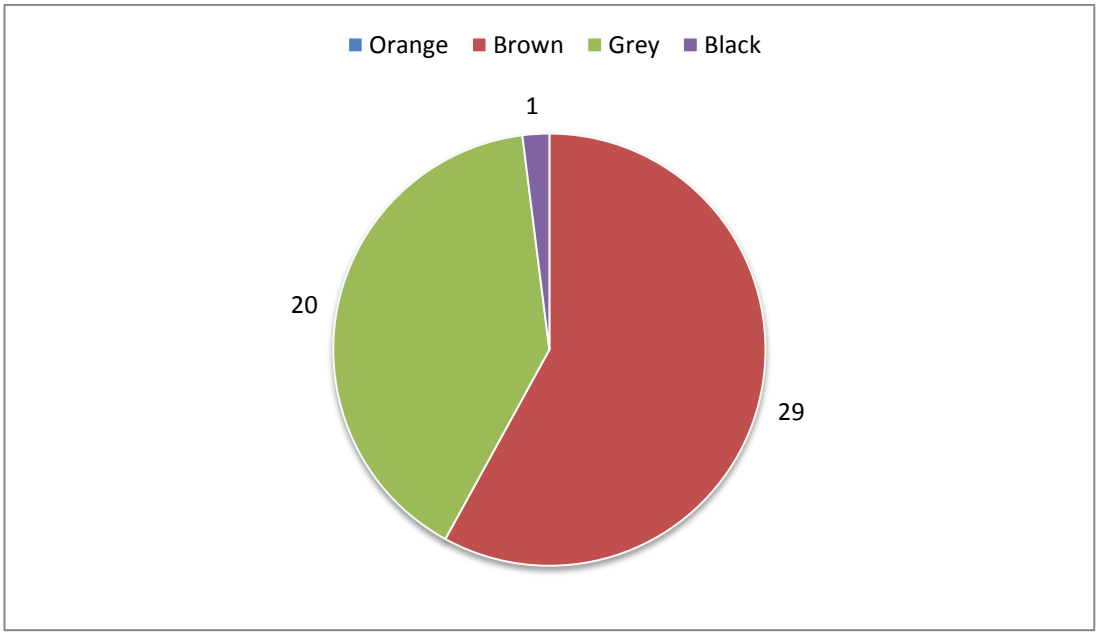


Figure 5.68b. Frequency of Total Belegiš II Exterior Colour

The data shows a range in exterior colour that changes from Belegiš I to II. The shift in range differs across sites. Whereas Stubarlija and Vršac – Stari Ludoš show a decrease in range, Vatin demonstrates an increase.

Tradition in Colour

Vessel colour is affected by firing practices, the temperature of firing and the type of clay used (Rye 1981:98); when fired in oxidised conditions, iron-rich clays produce red/ orange hues (Gibson 2002:47). Brown ceramics indicate oxidised firing conditions and the use of clay that contains little iron. Grey finishes suggest reduced firing atmospheres. The most prominent interior and exterior surface colour across all of the sites is brown. This is the case for vessels that traditionally fall into both the Belegiš I category or into the Belegiš II group. Yet there is also a range of colours that appears to be drawn upon by different sites in different ways. Tradition therefore sits within the range of colours produced.

5.1.7 Firing Practices

Below are descriptions of firing frequencies for both Belegiš I and II type vessels.

Belegiš I (Figure 5.69a and 5.69b)

As shown in figure 5.69a, evidence for single core firing appears on every site and it forms the highest frequency at the sites of Ilandža, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš. Reduced firing appears on a small percentage of Belegiš I vessels from Ilandža and Stubarlija. Rye number 14 firing appears on a small number of vessels from Surčin, and oxidised vessels only appear at the site of Stubarlija. Figure 5.69b indicates that across the sites, the largest percentage of Belegiš I vessels display single core firing.

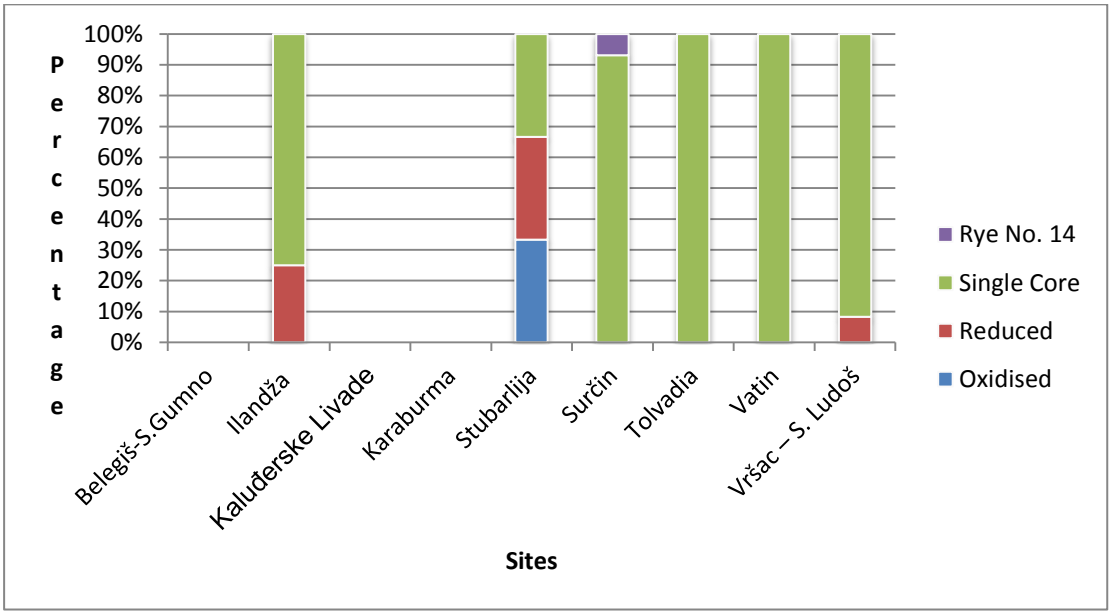


Figure 5.69a. Percentage Frequency of Belegiš I Firing

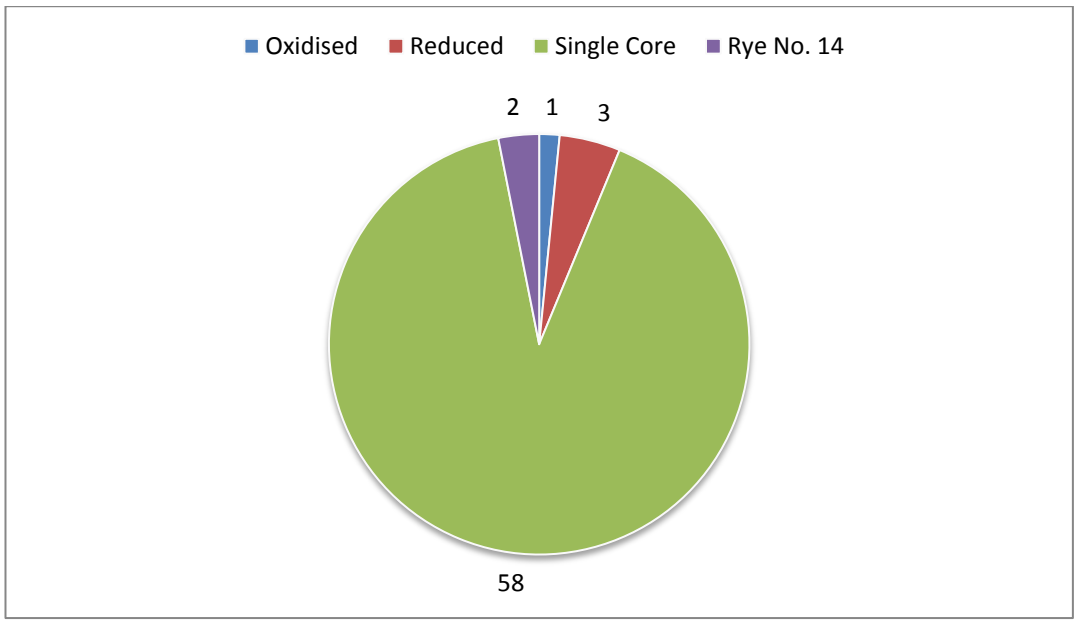


Figure 5.69b. Frequency of Total Belegiš I Firing

Belegiš II (Figures 5.70a and 5.70b)

Figure 5.70a shows that in the case of Belegiš II vessels, again all sites display the use of single core firing in some capacity, but that the frequencies differ across sites. For the sites of Stubarlija, Vatin and Vršac – Stari Ludoš, it presents itself as the highest frequency, indicative of technological preference. For the site of Surčin however, rye no. 14 appears to be the preference, as shown by the high frequency. This type of firing practice also appears at the sites of Stubarlija and Vatin. Reduced firing only occurs at the site of Vatin. Figure 5.70b shows that overall across the sites, rye no.14 is the form of firing with the highest frequency.

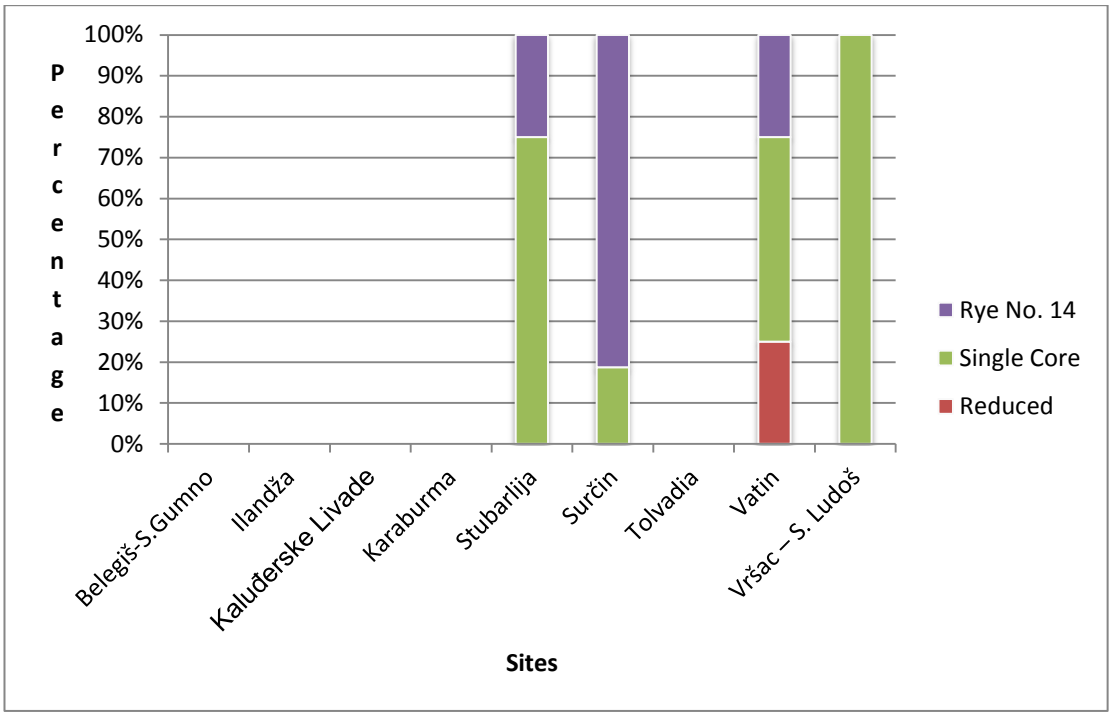


Figure 5.70a. Percentage Frequency of Belegiš II Firing

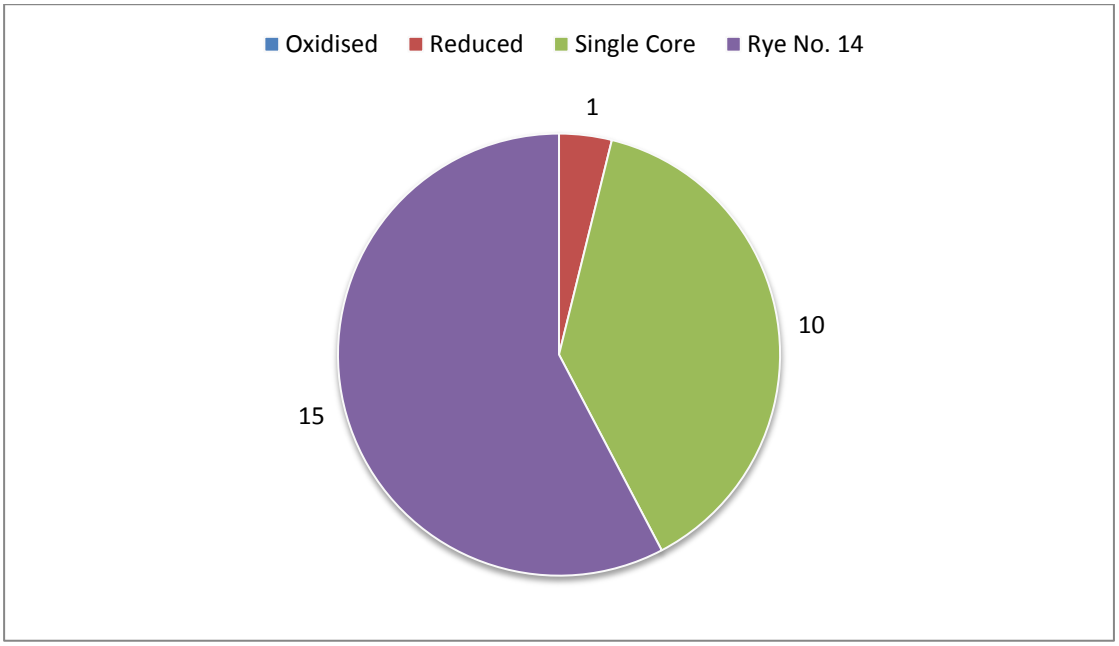


Figure 5.70b. Frequency of Total Belegiš II Firing

Tradition in Firing

A repertoire of firing options can be seen across Belegiš I and II, although it is drawn upon differently across the two vessel groups. Tradition therefore sits within the range of firing. The majority of vessels across sites exhibit oxidised surfaces with reduced cores. This suggests that those firing the vessels were using consistent firing practices. The soft powdery ceramic texture of the samples suggests that they were fired within low temperatures (Gibson 2002). Many of the vessels display reduced cores. Another firing signature left on a number of vessels is that of oxidised interior and reduced interior. This corresponds to firing type number 14 in Owen Rye's categorisation of firing practices (Rye 1981.). This pyrotechnical signature suggests that the exterior of the vessel was packed prior to being placed in the firing pit. This would have prevented the external surface coming into contact with oxygen to give a reduced finish. It is likely therefore that this firing practice was purposefully manipulated to create a grey exterior. This was slightly more prominent for Belegiš II vessels. Similar techniques were also prominent in the manufacture of Late Bronze Age ceramics in nearby Hungary (Coxon 2010).

Although there is no archaeological evidence for firing practices on Belegiš sites, the appearance of reduced cores and rye number 14 firing suggests that the vessels may have been pit fired. It is also possible that the vessels could have been fired in kilns as this type of pyrotechnology would have left similar technological traces. Without evidence for kilns on settlement sites, it is difficult to say for sure.

5.2 Discussion

The data presented in section 5.1, reflects the complicated nature of the Belegiš phenomenon. Pinpointing the traditional aspects of Belegiš manufacture proved challenging due to the amount of variation present within the assemblage. Yet despite this there are aspects of technological practice that remain constant throughout the manufacture of both Belegiš I and Belegiš II urns. The data suggests that the Belegiš tradition of making a particular type of vessel was defined by a core set of manufacturing principles that underpinned the variation between vessels, both within sites and over time. Similarities in the data clearly show that the phenomenon was not necessarily a homogenous entity but was still a single tradition. It is put forward that the Belegiš tradition can be identified and conceptualised in two ways, as a core of manufacturing principles that underpins all manufacture and a secondary repertoire of manufacturing options from which makers could draw from, demonstrating how traditions can be stable yet dynamic, as was suggested by Roux (2003).

5.2.1 Core Manufacturing Principles: The Belegiš Blueprint

Within this section it is argued that a key aspect of the Belegiš tradition is a core set of manufacturing principles adhered to by makers of both Belegiš I and II urns. A way to understand these underpinning methods of manufacture is to think of them as the *Belegiš blueprint*. As the name suggests, the blueprint refers to the principles that guided the making of Belegiš urns and was therefore a conceptual template. These suggest longevity in the transmission of specific manufacturing concepts. Each Belegiš urn within the assemblage is therefore an expression of shared values and social understanding (Dobres 2000), demonstrating at least some social continuity over a 500 year period. The core set of technological behaviour that emerged from the dataset is drawn out and synthesised below. The social implications of the Belegiš tradition and its continuity are discussed throughout.

The Use of Grog

Given the similarity of clay sources across the whole Belegiš region and the homogeneity of clay used for the vessels, an assumption made throughout this thesis is that the majority of vessels were made locally. All Belegiš vessels examined displayed the use of grog in the tempering process. This suggests similarity in the ways in which makers were engaging with raw materials. Therefore a noticeable feature of the Belegiš blueprint is the use of grog within the clay preparation. Grog is a common temper that has been well documented within European Prehistoric pottery (Boast 1995, Case 1995, Gibson and Woods 1997). This means that it is not a material that is specific to the Belegiš tradition. However, literature on grog-

tempered pottery can offer insight into the possible significance of the use of grog within the Belegiš context.

The consistent use of grog indicates that this technological knowledge used and passed on within the Belegiš tradition. Grog has a similar rate of thermal expansion to the clay matrix in which it is embedded (Gibson 2002a). Therefore it has been widely used throughout space and time in the manufacture of cooking vessels (Rice 1987). These Belegiš urns however served a different purpose and so one must posit that grog was chosen and used for a different reason. Perhaps the most obvious benefit of tempering clay with grog is that it strengthens the wet clay. This is advantageous during the stages of vessel formation by improving the workability of the clay and preventing warping. The thermal dynamics of grog also increase thermal shock resistance, meaning that during the firing process these inclusions are unlikely to react to the heat and shoot out of the vessel wall (Gibson 2002b). This is backed up by the data presented in Figures 5.1 and 5.2 which demonstrates more pronounced use of grittier fabrics that contain larger pieces of grog (Gr2 and Gr3) for Belegiš II vessels. This coincides with the creation of vessels with three dimensional decoration in the form of faceting and fluting, as shown by Figure 5.57, that would have arguably required stronger clay in order to accommodate these heavier displacement methods. It is possible therefore that a shift towards the coarser fabrics was a direct result of this manufacturing necessity, and that therefore makers manipulated their knowledge of tradition to accommodate this.

Not all technological behaviour can be attributed to such functional needs. Some choices may represent more socially orientated expression and meaning. It has been argued that the embodiment of the crushed vessel into a new one marks a complete life-cycle of the pot, conveying continuity in tradition. The grog symbolises vessels from the past at the same time as it establishes relations with the past' (Kreiter 2007:130). It has been suggested that the use of crushed up pottery as temper embodies notions of ancestry, with grog creating a tangible link to the past (Barley 1994, Gosselain 1998, Jones 2000, Michelaki 2008). This has particular significance given the fact that Belegiš urns were used to house the remains of deceased members of the community. On this basis we can posit that the use of grog may have had a social function related to remembrance and the creation of links between the living and the dead. The ceramic technology employed and the tradition this embodies may therefore have been bound up with social relations (Chapman 2000, Jones 2002, Boivin 2004). The bringing together of old vessels and new vessels may have been an important and conscious aspect of tradition for the Belegiš makers, and thus the very reason that the use of grog had such longevity. It can be argued that tradition played a very social function. As demonstrated by the continued use of grog, certain aspects of the Belegiš tradition

represented stability and familiarity, both in terms of manufacture and social meaning. The social significance of Belegiš tradition is explored further in section 5.3.

Vessel Building Method

At the core of the Belegiš blueprint are the vessel building methods. As explained in section 5.1.2, a hybrid of slab-building for the lower part of the vessel and coil building for the upper part of the vessel, was employed. These basic building techniques were used throughout the span of Belegiš production. Ethnographic studies have demonstrated that methods of vessel formation are resistant to change and are usually a deeply embedded aspect of manufacture (Sackett 1985). This is certainly the case with Belegiš. These methods of shaping were a fundamental underpinning of the manufacture of a Belegiš urn. In a similar fashion to the use of grog, these techniques reflect longevity in methods that were central to the Belegiš tradition. The placement of handles was also an essential feature of Belegiš manufacture. Analysis shows that vessels were always made with four handles or lugs placed at ninety degree intervals around the widest part of the vessel belly. The distinction that has been made between Belegiš I and II vessels is that the majority of Belegiš I type urns have tunnel handles, whereas a much larger percentage of Belegiš II vessels demonstrate the addition of lugs. Regardless of the handle or lug type, the practice of placement stays consistent and is thus an easily recognisable attribute of the Belegiš blueprint. It is suggested that the placement of these handles guided the ways in which decoration was placed on the vessel. This is discussed in greater depth below.

The Decorative Template

In section 5.1 it was shown that despite the decorative variation between Belegiš vessels, a shared underpinning template of decorative placement could be demonstrated. This template, highlighting a uniform conceptual understanding of appropriate decorative layout, was adhered to by all makers who decorated their vessels. Figures 5.18 to 5.23 in section 5.1 highlight that each layout uses the same template. This underlying use of zones comprises a core feature of Belegiš decorative practice that once again demonstrates longevity throughout the span of Belegiš production; both Belegiš I and Belegiš II use this template.

Rules of Symmetry

A key characteristic of the Belegiš decorative template is the use of symmetry. Each decorative spatial layout, particularly on the vessel shoulders and bellies exhibit visual balance as demonstrated by the type of decorative layout documented; the same motifs were systematically replicated four times around the belly, either above the handles or lugs or between them. This symmetry uses the three dimensionality

of the vessel and is most obvious when looking at the vessel from above. The type of visual equilibrium is known as *radial balance*, where the decorative motifs radiate out from a central point, in the case of decorated Belegiš urns, the neck. As is seen, for example, from Figures 5.71a and 5.71b below, the motifs are distributed evenly, creating decorative flow. The conformity in spatial understanding of decorative zones suggests that the makers were thinking through their craft in the same way. The transmission of such manufacturing ideals from generation to generation is discussed later on within this section.

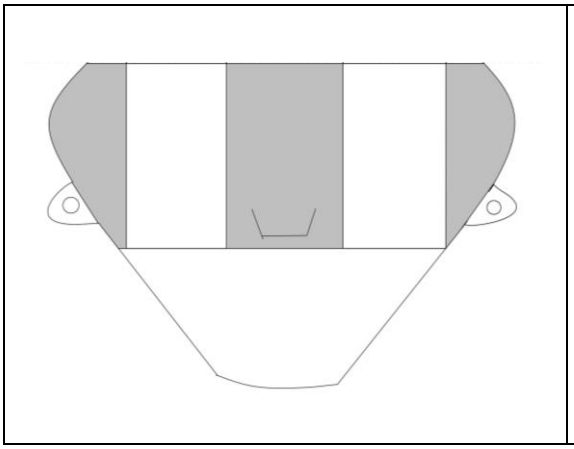


Figure 5.71a. Side on view of layout SL3A

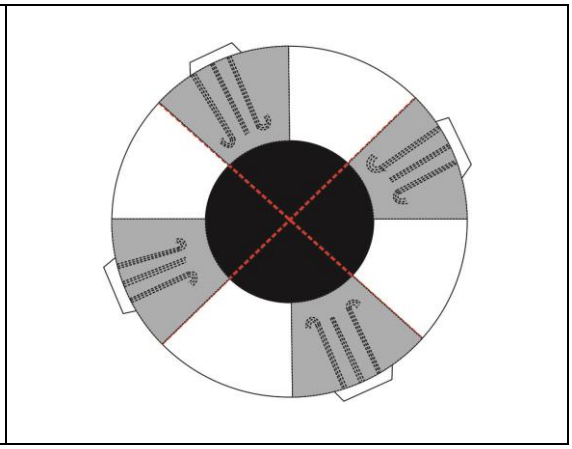


Figure 5.71b. Birdseye view of layout SL3A demonstrating radial balance

Symmetry also underpinned each motif used. This is in the form of *bilateral symmetry*, where decorative elements are arranged equally each side of a central vertical access (Figure 5.72). This is most noticeable for motifs M5, M6, M7, M8 and M9. Again, although variation in motif types occurs, they are all united by the underpinning principle of symmetry.

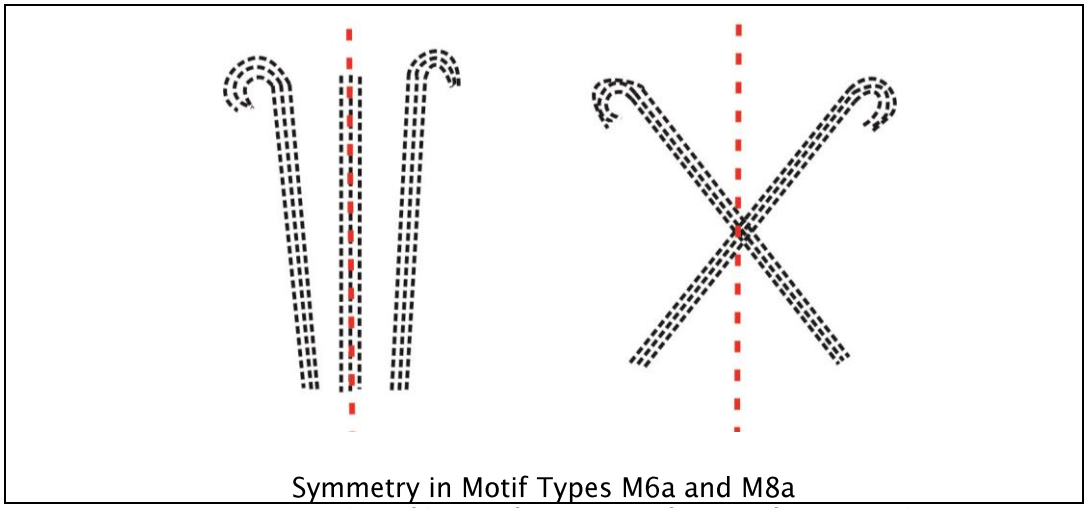


Figure 5.72. Examples of lines of symmetry for motifs M6a and M8a

The preference for symmetry within Belegiš production may be bound up with aesthetic preference. Psychological studies of perception have shown a direct correlation between highly favoured decorative designs and symmetry within modern contexts (Szilagyi and Baird 1977). The use of symmetry within Belegiš production may signal a similar decorative ideal in order to create an aesthetically pleasing effect.

5.2.2. Manufacturing Options: The Belegiš Technological Repertoire

Although it has been shown that elements of the Belegiš tradition reflect continuity, the data also highlights that there was a range of technological options for each phase of manufacture. Section 5.1 demonstrated that throughout Belegiš I and II the variables of shape, decorative layout and motif, surface finish and firing techniques display a small range of variation. On the whole, these repertoires of options appear for both Belegiš I and II groups of vessels again demonstrating continuity and communicating longevity in specific technological knowledge. However analysis of the dataset also highlights that there were shifts in technological behaviour in certain manufacturing variables across sites over time. The data also shows differences in the ways makers between sites drew upon the repertoire of options. This reflects a pool of technological knowledge that makers took from.

5.2.3. Thinking through the Belegiš Tradition

Commonalities in the manufacture of Belegiš urns appears within; the preparation of the clay, the vessel building methods, the use of decorative templates and use of symmetry. The core set of manufacturing principles demonstrate that Belegiš urns were bound together by an underpinning tradition. Yet these underlying principles were bound up with a technological repertoire of options and therefore a small range of different ways in which these principles could be expressed. The Belegiš tradition of making a vessel therefore sat within the interaction between core principles and the range of manufacturing options.

It has been argued by researchers that tradition is bound up with social identity and that this rests on the bringing together of the past and the present (Jenkins 2000; Gosselain 1998, 2000). With this however, there is a danger of slipping back into culture-historical interpretations, where differences in material culture reflect different 'cultures'. It is therefore more cautious to state that the Belegiš tradition reflects a society that was bound together by a set of technological principles. What can be said with more certainty is that within the Belegiš technological tradition, past and present were linked through the continuous transmission of technological knowledge; makers were part of a lineage of manufacture which was passed down

through generations. Tradition has been argued to be a distinguishing feature of different groups of people, with shared cultural tradition highlighting social cohesion (Barley 1983). In light of similarities running through the assemblage, it can therefore be argued that the Belegiš tradition reflects a social unit in which individuals were adhering to and passing on specific manufacturing ideals. The Belegiš tradition would have been maintained through the passing of technological knowledge from one generation to another (Crown 2001). This required the transmission of discursive knowledge as the understanding of what needed to be done (Budden and Sofaer 2009). As will be discussed in Chapter 6, although tradition sits within discursive knowledge, there are variations in the ways which an individual could express a tradition through gestures. This relates more to direct learning strategies that can be linked specifically to methods of practice.

5.3 The Social Context of Tradition

Roux argues continuity and shifts within technological traditions are a result of both internal social interactions and external influences (2003:1). The ways in which Belegiš manufacture was maintained and progressed may have been a result of many co-dependent factors related to social context and requirements of the object. In order to elucidate the phenomenon in as much as possible it is vital to explore the social interactions, such as in a mortuary setting, which required manufacturing continuity. This requires consideration of the social role of the vessels and the wider Bronze Age social arena in which the Belegiš was situated.

5.3.1 The Social Significance of Belegiš Urns

As has been explained throughout this chapter, the data demonstrates that Belegiš vessels were tied to a single tradition through longevity in certain aspects of manufacturing technology. This was paralleled by the continued use of cemeteries as indicated by the fact that the majority of sites held a range of Belegiš I and II urns. This continuation in manufacture and depositional behaviour suggests a level of social stability. It has been argued that maintenance of such principles needs to be understood within its social and historical context (Gosselain 1992; Lemmonier 1992). Therefore illuminating the significance of the longevity of certain technological elements and shifts in other variables of production requires consideration of the social function of the vessel.

Chapter 3 explains that each vessel included in this study was uncovered within a mortuary context and many were found containing cremated bone (Petrović 2006; Torodorić 1977). The evidence suggests that the vessels were made purely for this

intended use; no use wear was found upon the vessels indicating that there was no domestic use prior to deposition. This could be attributed to low levels of preservation as many vessels displayed abrasion on the surface which would have erased any traces of use. However many of the vessels were also low-fired which could suggest that there was a need for quick manufacture, presumably after the death of a member of the community. This would support the hypothesis that these vessels were made with the sole intention of being used to hold the cremated remains of the deceased. This means that vessels were being made *ad hoc*, perhaps shortly after the death of a family or community member. The longevity of traditional manufacturing practices was therefore bound up with the vessel's role as container for the dead. Members of the society were invested in making and using these vessel types. It has been argued that similarity between vessels within a funerary context may be a deliberate attempt to establish ritual bond between generations of ancestors (Oestigaard 1999:352). As has previously been discussed in section 5.2.1, this bringing together of past and present was included in the very technological sequence itself and this is particularly noticeable in the inclusion of grog within the clay. The tradition of making an appropriate vessel therefore may have been a significant part in the set of funerary preparations and rites. Considering that tradition has been argued to be bound up with culturally constituted knowledge (Lechtman 1977, Lemmonier 1992), the makers maintaining the Belegiš tradition were transmitters, not just of technological knowledge, but also values and perhaps even beliefs and world views (Dobres 2000). Unpicking these social beliefs is beyond the scope of the data used within this study, but what can be said is that makers may have been passing on set ways of making a vessel that may have contained social meaning relating to an understanding of death and the ritualised ways in which it was dealt with.

At another fundamental level the longevity signalled by the Belegiš as a tradition speaks of shared ideals. The data shows that although the Belegiš blueprint remained at the heart of manufacture throughout, other variables highlight a region wide shift in tendency through time, most noticeably in terms of vessel shape and decoration. The fact that these shifts occurred on a regional scale reflects continued shared aesthetic preferences and perhaps continued social cohesiveness.

5.3.2 The Belegiš Tradition in a Wider Context

The continuity in Belegiš manufacture can be argued as signalling a shared sense of social identity within Vojvodina. It may be that the Belegiš tradition reflects some sort of social boundaries within the region (Shennan 1994). There are certainly anthropological accounts of pottery production focussed particularly on decoration

that demonstrate this and therefore support this claim (Gosselain 1998 and 2000). The data used for this study shows that the longevity in practices was paralleled with a narrowing of certain manufacturing options, such as shape and decoration, from Belegiš I and II. In order to shed light on how and why this occurred, it is important to contextualise the Belegiš tradition within its wider social surround by comparing transitions within the phenomenon with ceramic material from neighbouring areas.

The data presented within this chapter shows that during the earliest phase of manufacture, Belegiš I, vessels were made with cylindrical necks and pronounced neck to shoulder shapes. Distinguishing them from Belegiš II, these earlier vessels were also decorated with incised decoration and cord impressions. Looking to contemporary material from nearby groups such as Dubovac Žuto Brdo, as explained in Chapter 3, we can see the use of incised decorative techniques (Szentmiklosi 2006) suggesting that there was overlap between Dubovac and Belegiš I in terms of decorative technique. An arguable distinction between these two groups of ceramic material is that each has characteristically distinctive motifs. Nonetheless, despite these differences, the similarities point towards the fact that Belegiš I urns sat within a wider social network of ceramic technological knowledge and preferences. To reiterate this point, it has been noted that throughout Europe as a whole there were large scale similarities in a wide range of material culture from the Middle Bronze Age onwards (Vankilde 2007:134).

The Bronze Age in this region is a notoriously well connected period of prehistory, with local river systems providing extensive links allowing for the movement of resources and ideas (Vankilde 2007:12). As was discussed in Chapter 3, the Belegiš II phase of manufacture is contemporary with the Urnfield phase of Late Bronze Age Europe, the core of which spread over central Europe. This period is often defined by changes in burial practices from inhumation to cremation (Osgood and Monks 2000:72). Despite this, the Belegiš were cremating their dead before the onset of the Late Bronze Age (Petrović 2006). Indeed there were social groups such as the Vatya of the Carpathian basin that were also engaging with cremation practices during the Middle Bronze Age (Vicze 2001:52). Their burial practices mirror the Belegiš in so much as cremated remains were also placed within biconical urns with cylindrical necks. In a similar fashion to the Belegiš, these were also often accompanied with smaller cup-like vessels (Budden 2007). This highlights that the Belegiš was not an isolated phenomenon but was integrated within a wider Bronze Age society within central Europe and the Balkans. This is further backed up by the fact that Middle Bronze Age vessels from the Carpathian region display similar technological traces to the Belegiš such as slab-building, smoothed or burnished surfaces, single core firing and the use of grog as temper (Budden 2007; Kreiter

2007; Michelaki 2006). However, despite the fact that the Belegiš demonstrates similarities with wider Middle Bronze Age trends, there are elements of Belegiš manufacture, such as the repertoire of motifs, which make it distinct as a tradition. The Belegiš can therefore be thought of as a regional tradition.

In contrast to Belegiš I, the data within this research has highlighted that Belegiš II urns have tapered necks and were decorated with three dimensional decoration created by faceting and fluting techniques. As was discussed in Chapter 3, this type of decoration was present on vessels contemporary with Belegiš II from surrounding areas of Romania and Hungary which are considered to be part of the Gava phenomenon (Bukvić 2000). These similarities are well-known within traditional culture-historical narratives of the material. The shift in desire for three dimensional decoration in the Belegiš II phase mirrors a wider social preference for this type of aesthetic effect. Hence it can once again be argued that the Belegiš tradition sat within a wider tradition of ceramic manufacture within central Europe.

The Belegiš urn phenomenon and the tradition that it encapsulates sat within a wider series of material and social changes. Tradition has been argued to be an expression of social relations (Lechtman 1977). In the case of Belegiš urns, the integration of the old with new is therefore a reflection of the complexity of social connections extending beyond the Belegiš, at this time. Despite this, the tradition marks some level of social continuity through the maintenance of certain practices. This would have required controlled strategies for the passing on of technological knowledge. This is explored in detail through the lens of practice in the next chapter.

Chapter 6
Practice
Data Presentation and Discussion

Within Chapter 5 it was suggested that the Belegiš is a tradition of vessel manufacture characterised by certain commonalities that were shared across sites. However, one of the key issues in dealing with the Belegiš phenomenon has been accommodating the variation present (Stojić 1998, Tasić 2002). As was presented in Chapter 2, the concept of practice has been used to elucidate community manufacturing behaviour as well as the role of the individual. In light of this, within this thesis the concept of practice offers an assessment of the various ways in which the Belegiš tradition was expressed and encourages an interpretation that is centred on exploring social interaction within the Belegiš tradition. The data is used to both identify communities of practice and investigate the practice of the individual. During analysis it became apparent that much of the variation in practice was during the decorative stages of crafting, and this is consequently the focus of this chapter. The data is presented thematically in three sections; *motif*, *technique* and *execution*.

Throughout this chapter, data from individual sites is presented and explored. Whereas a distinction between Belegiš I and II was made in Chapter 5, within this chapter these two groups are combined in order to investigate possible site specific expressions of the Belegiš tradition.[3]

6.1. Data Presentation

The discussion presented within this chapter is based on the assumption that the urns were made locally, as previously proposed in Chapter 5. Below, the data for each set of variables is presented site by site in the form of pie charts to enable comparisons. This allows for contrasts to be made between sites. These charts are also supplemented with tables that condense the data and demonstrate the presence or absence of particular variables. As shown in Chapter 5, the technology used to make the vessels was shared by Belegiš makers across all sites. This means that the range of technological traces of clay preparation, formation methods, surface finishes and firing methods are similar across all sites. The same range of shape variation occurs across all sites, although it was shown that the frequency of these shape attributes can vary between the sites and over time. These were

[3] Changes in practice over time were not included as an axis of enquiry due to the lack of sufficiently detailed chronology.

discussed accordingly in Chapter 5. As will be demonstrated throughout this chapter, the variables that enable the most insight into presence versus absence, variability and gesture, directly relate to vessel decoration, more specifically the decorative motifs, the techniques used and the ways in which they were executed. However, in addition to this vessel size is also taken into account in order to probe gesture within manufacture. Whereas in Chapter 5, the data was presented as percentages, within this chapter frequencies are given instead due to the fact that the data is represented in the form of pie charts and the sample sizes can often be low.

6.1.1 Motifs

Analysis of urn decoration revealed that the same suite of decorative motifs (see Chapter 4) did not appear on each site. The frequencies of motifs as per site are indicated below. One again, these are analysed in accordance to the decorative zones set out in Chapter 4 because it enables better insight into how practice relates to aspects of tradition, such as the decorative template, discussed in chapter 5. Below are the frequency pie charts for each site.

Decorative Motifs on Neck

Zone 1A (Figure 6.1)

Figure 6.1 shows that the sites of Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš demonstrate only M1a motif in zone 1A. In contrast, Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin display the use of M1a and M1b, although M1a is the most prevalent. Therefore based on this, Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš demonstrate similarity and are a distinct group showing similar decorative traits for zone 1A. Based on this, the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin form a separate group, characterised by the use of M1a and M1b motifs in zone 1A.

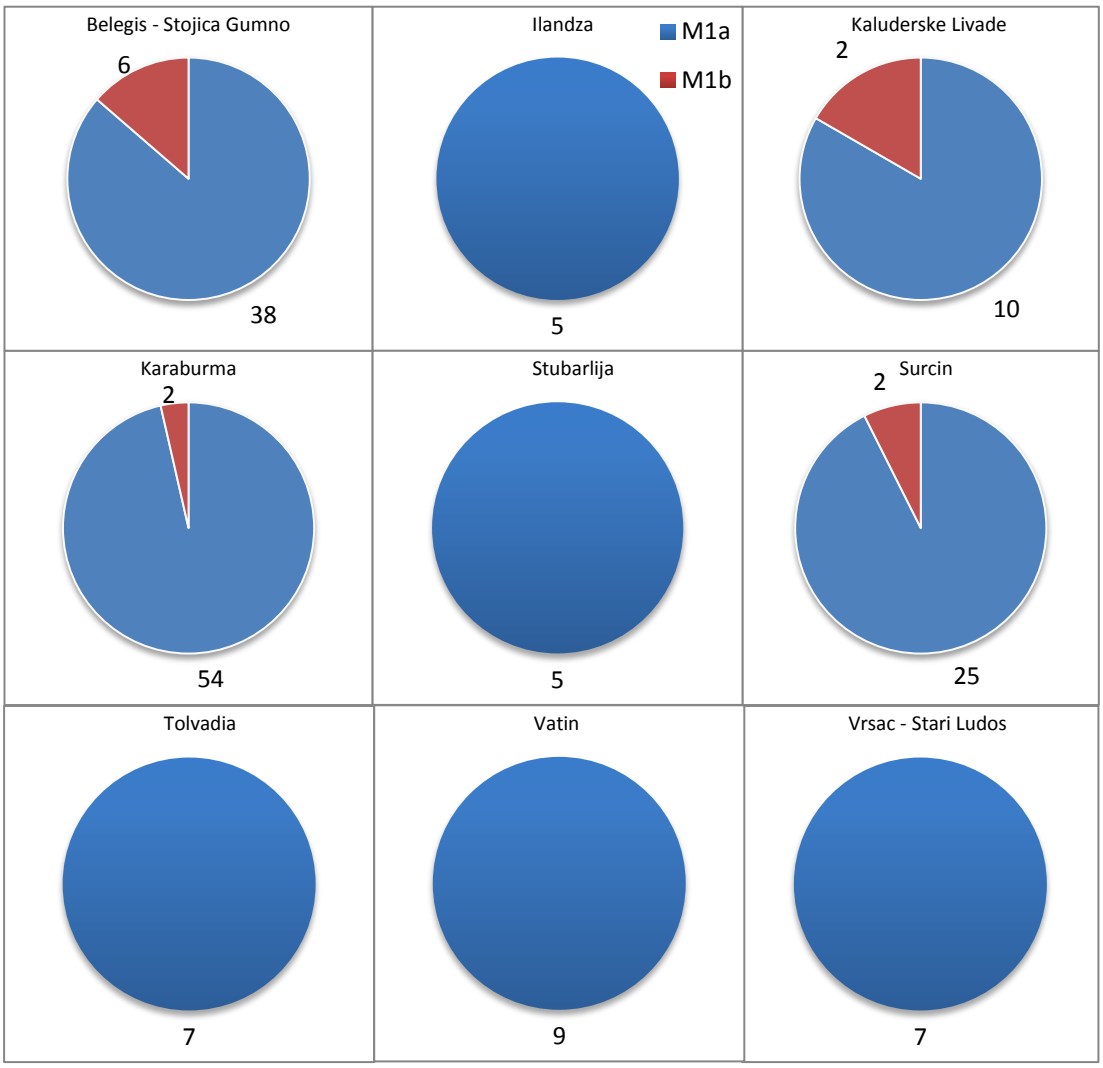


Figure 6.1. Frequencies of Motifs in Zone 1A at each Site

Zone 1B (Figure 6.2)

In figure 6.2, it is clear that, as with zone 1A, the sites of Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš show only M1a motif in zone 1B. In contrast, Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin display the use of M1a and M1b, although M1a is the most prevalent. Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš therefore represent one group of sites with a similar range and frequency of motifs in zone 1B. Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin in comparison represent a group of sites with a similar use of both M1a and M1b motifs in zone 1B, distinct from the other sites.

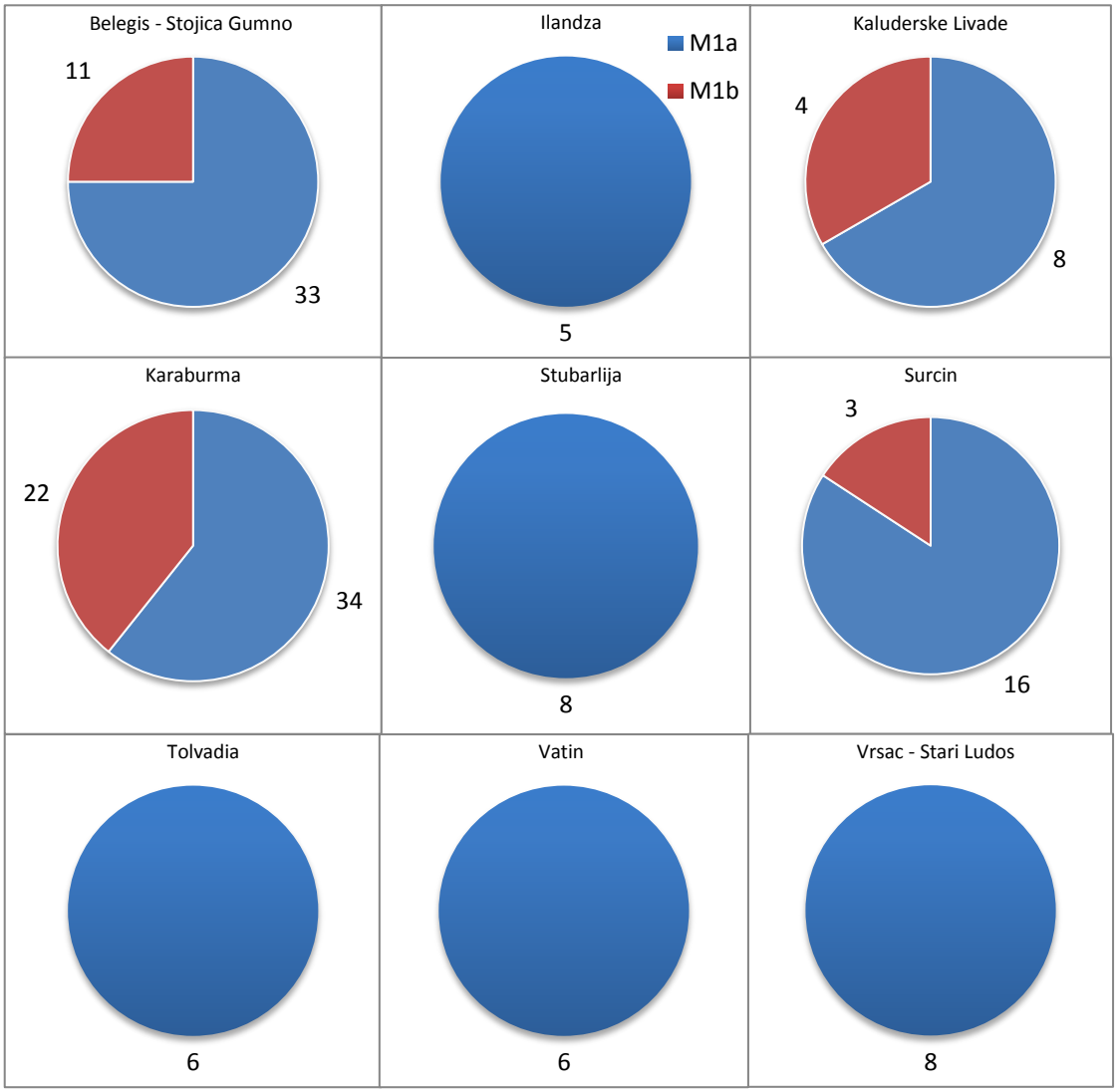


Figure 6.2. Frequencies of Motifs in Zone 1B at each Site

Zone 1C (Figure 6.3)

Figure 6.3 displays that once more, the sites of Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš show only M1a motif in zone 1C. In contrast, Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin display the use of M1a and M1b, although M1a is the most prevalent. It is clear Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš once again display a similar pattern in terms of motif choice and frequency in zone 1C, which is distinct from Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš, which can also be grouped together based on similarities.

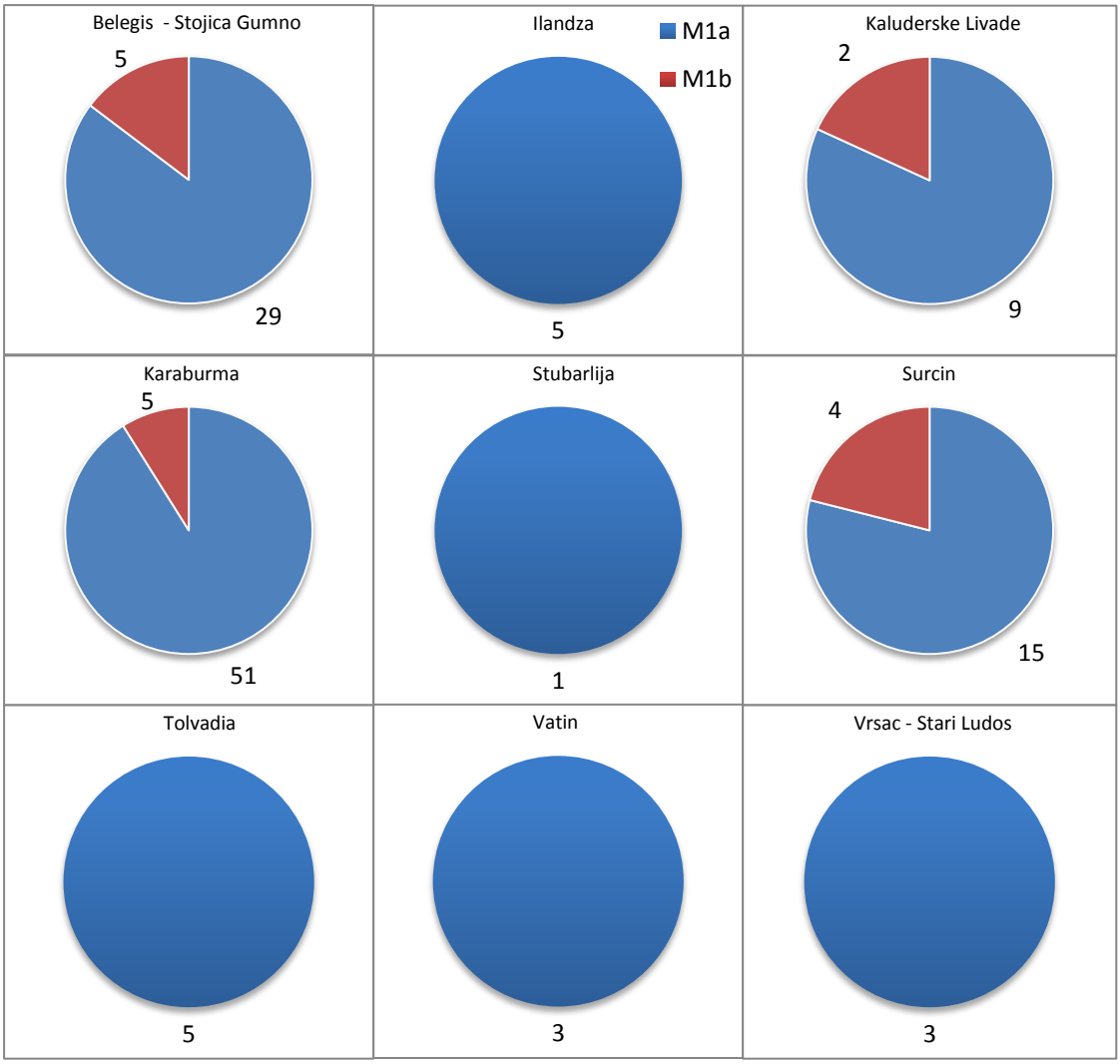


Figure 6.3. Frequencies of Motifs in Zone 1C at each Site

Figures 6.1 to 6.3 above show a similar pattern. Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin display the use of two motif types on the neck whereas in comparison the sites of Ilandža, Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš only display the use of one. The absence and presence of motif M1b one as neck decoration highlights the different ways makers that in practice drew upon the Belegiš tradition.

Decorative Motifs on Shoulder

Zone 2A (Figure 6.4)

Figure 6.4 clearly shows that the range of decorative motifs in zone 2A is unique to each site. The site of Karaburma has the highest range frequency, with 6 different motifs types appearing in zone 2A. The sites of Ilandža, Kaluderske Livade, Stubarlija and Tolvadia display the lowest range frequency, each with three motifs. Yet this range is not the same across these sites. The sites of Karaburma, Surčin,

Vatin and Vršac – Stari Ludoš display the widest range of motifs used in zone 2A suggestive of diversity in decorative practice. Vatin and Vršac – Stari Ludoš display the exclusive use of M4a decoration, setting them apart from the other sites.

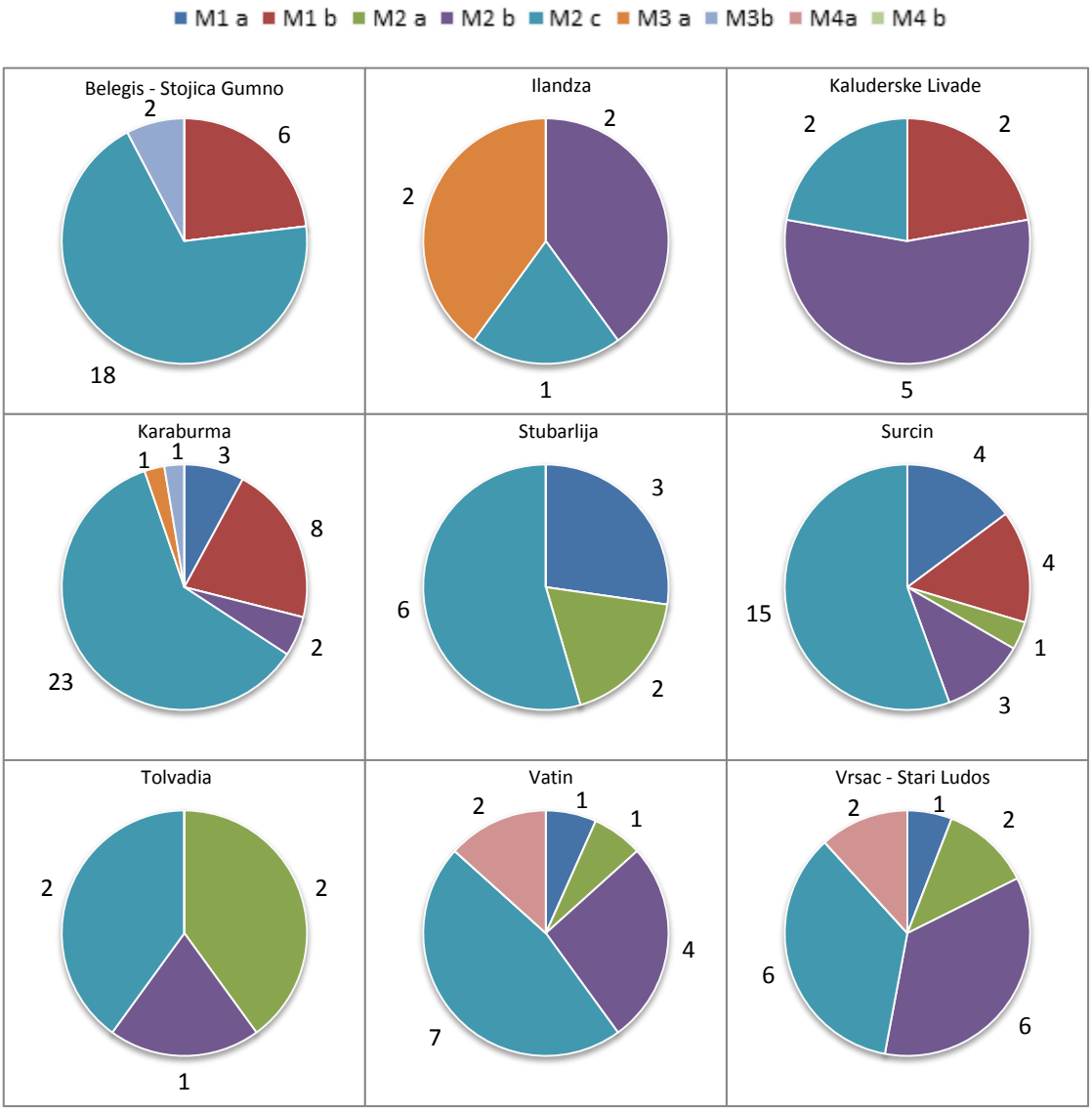


Figure 6.4. Frequencies of Motifs in Zone 2A at each Site

Zone 2B (Figure 6.5)

Figure 6.5 highlights that the sites of Belegiš – Stojića Gumno and Karaburma have the highest ranges in motifs within zone 2B. These are the same ranges, but in different frequencies; Belegiš – Stojića Gumno shows a preference for M2a motif and Karaburma in contrast has M2b as its highest frequency. Ilandža displays the lowest range which consists of only one motif type; M2b. Once again the range of motifs for each site are not necessarily similar; as an example, Vršac – Stari Ludoš is the only site that displays motif type M4a. The sites of Belegiš – Stojića Gumno and Karaburma show the widest range of motifs in zone 2B, communicating once again

slightly more diversity in practice in comparison to the remaining sites. Vršac – Stari Ludoš is the only site to demonstrate M4a decoration.

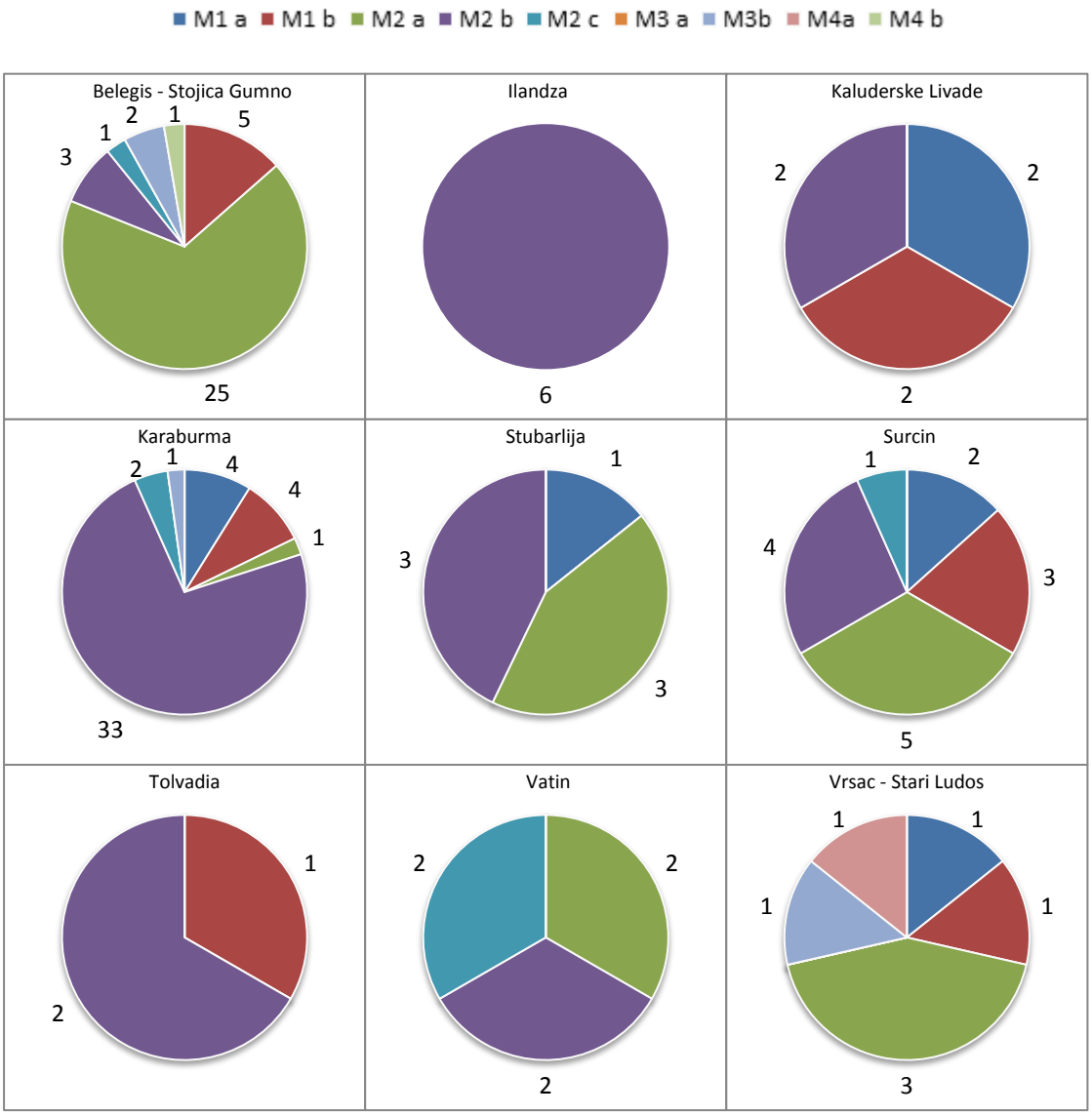


Figure 6.5. Frequencies of Motifs in Zone 2B at each Site

The above figures demonstrate the variation in the execution of shoulder decoration between sites. This suggests that each site drew upon the repertoire of motifs in different ways. Although no clear pattern emerges, within figure 6.5, the sites of Vatin and Vršac – Stari Ludoš stand out due to the inclusion of pseudo handles (M4a). This may therefore represent an aspect of Belegiš practice that was specific to this geographical area of Belegiš; the sites of Vatin and Vršac – Stari Ludoš sit together near the periphery of Belegiš distribution.

Decorative Motifs on Belly

Zone 3A (Figure 6.6)

As figure 6.6 shows, the sites of Belegiš – Stojića Gumno, and Karaburma show the greatest range of motif options in zone 3, and both demonstrate a high preference for M6a motif, as indicated by the comparatively high frequencies. Similarly, at the sites of Surčin and Kaluđerske Livade, M6a is the highest frequency. The site of Ilandža has the lowest range of motif options; all vessels with decoration in zone 3A display M8 motif type. The site of Tolvadia also displays a high frequency of M8a motif, with three quarters of the vessels displaying this type of decoration. Vatin and Vršac – Stari Ludoš similarly display the highest frequency as M8a, suggestive of a preference for this motif. It can be said therefore that the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin show a similar preference for M6a decoration and Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš are united by their overall preference for M8a motif. Yet the data also shows that each site's use of motifs in zone 3A manifests in a unique way.

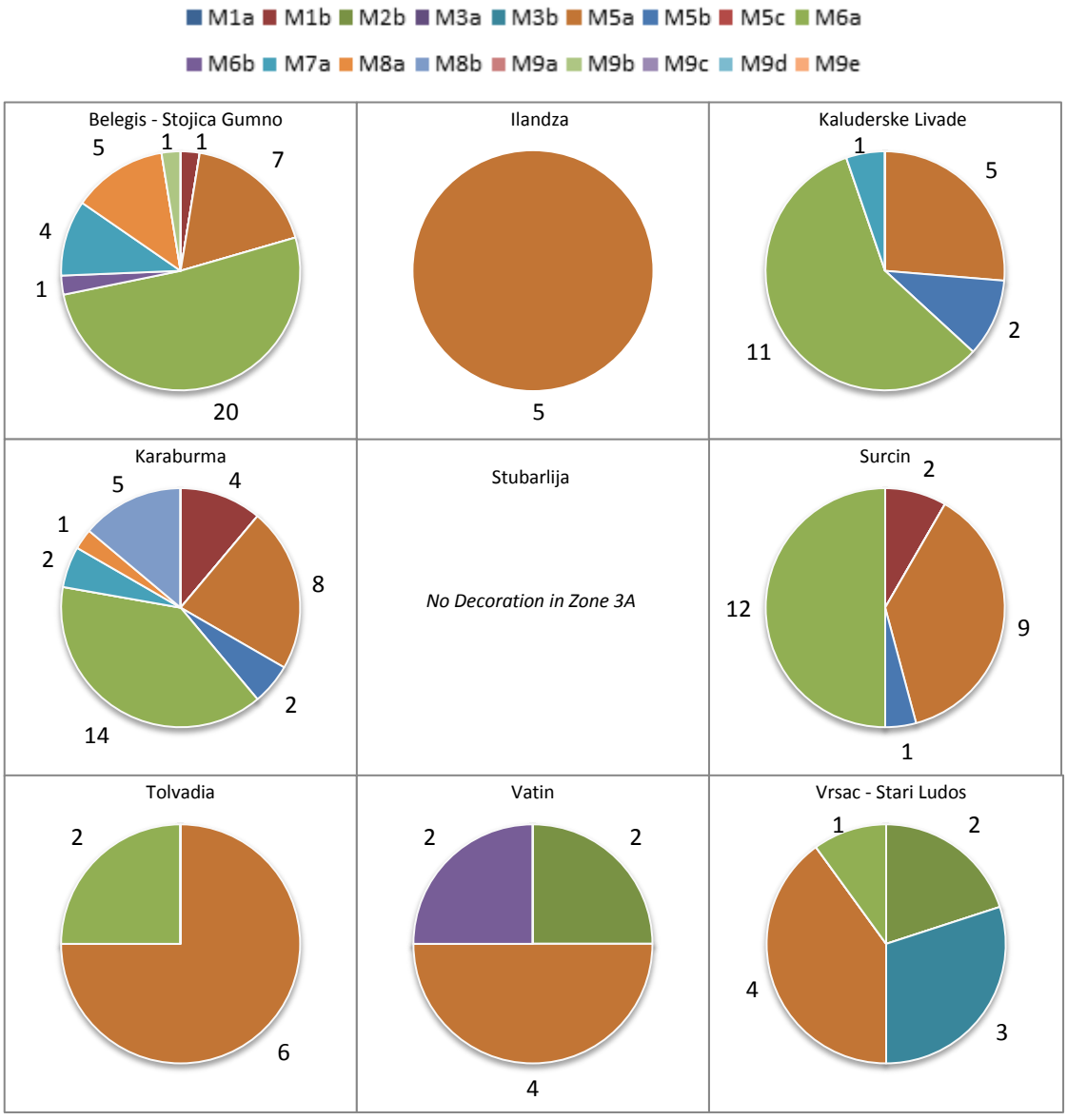


Figure 6.6. Frequencies of Motifs in Zone 3A at each Site

Zone 3B (Figure 6.7)

In figure 6.7, it can be noted that Kaluderke Livade displays the widest range in different motifs placed in zone 3B. This is closely followed by the sites of Belegiš – Stojića Gumno, Karaburma and Surčin. The sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Stubarlija, Surčin, Tolvadia, Vatin and Vrsac – Stari Ludoš show a preference for M8a decoration, indicated by the high frequencies. The exception in is Karaburma, which shows a preference for M9a motif. Once again, each site paints a different and unique picture, yet the sites of Belegiš – Stojića Gumno, Kaluderke Livade, Karaburma and Surčin are bound by their display of wider ranges of motif options for zone 3B.

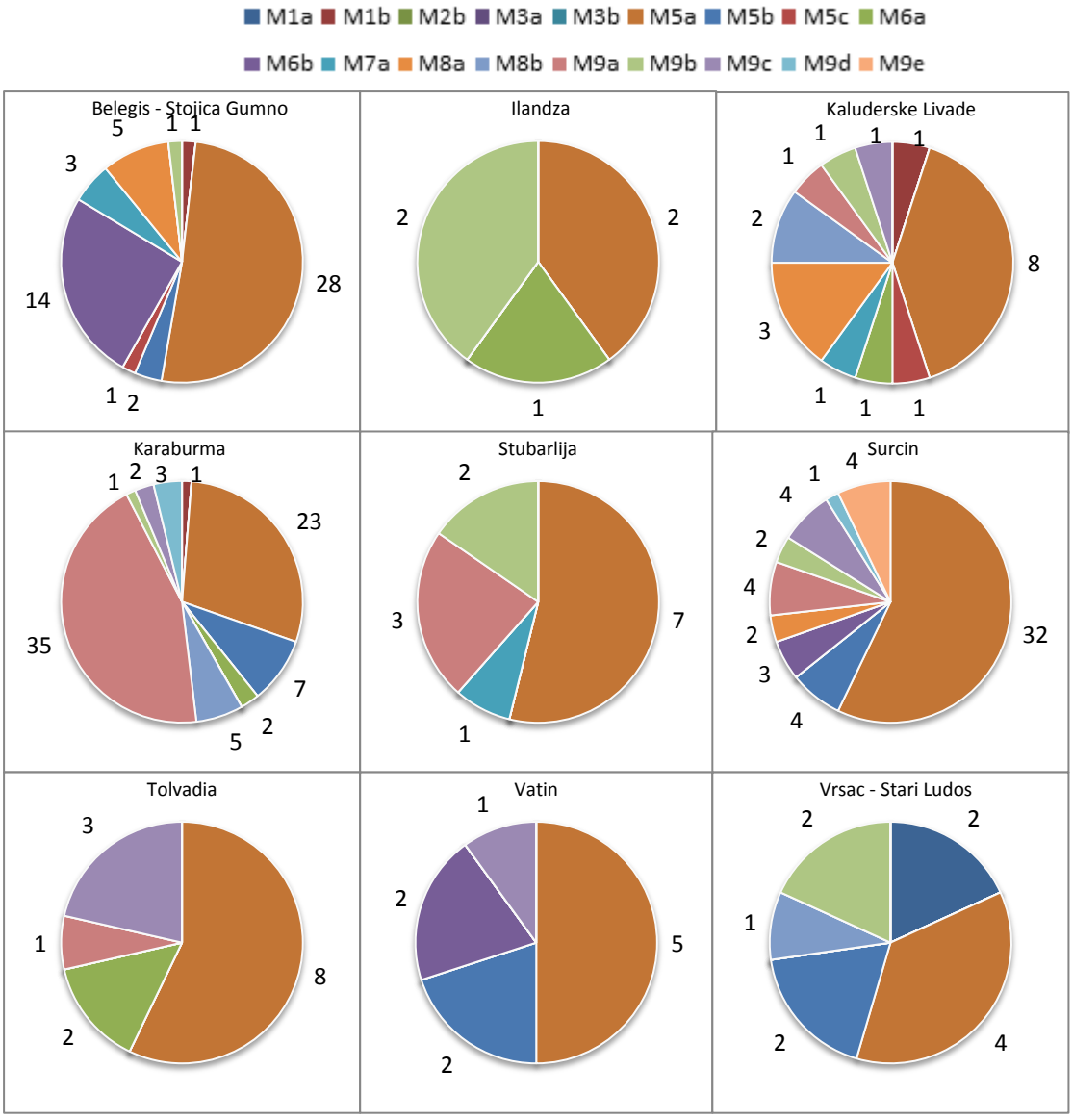


Figure 6.7. Frequencies of Motifs in Zone 3B at each Site

Figures 6.6 and 6.7 demonstrate the variation in belly decorative practice between sites. Although they drew from the same repertoire of motifs, makers at each site did so in varied ways. Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and

Surčin show the most similarity, especially with decoration placed in zone 3B, which demonstrates variation in motifs chosen. Vatin and Vršac – Stari Ludoš show similarity, particularly in the use of applied bosses (M2b) in zones 3A. These bosses are not used as belly decoration for any other site.

6.1.2 Technique

It was demonstrated in Chapter 5 that a range of decorative methods was used across the sites included within this study; cord impression, incision, impression, applied, inlay, faceting and fluting. Yet examination also highlights that there were differences in the ways these decorative methods were applied. As was set out in Chapter 4, the word technique is used within this thesis in relation to the specific application of a decorative method. The frequencies of these decorative techniques are given below.

Cord Impressing Technique (Figure 6.8)

Figure 6.8 shows that the sites of Ilandža, Kaluđerske Livade, Stubarlija, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš demonstrate preferences for triple cord impressions, to varying degrees, and that also this is a technique that appears on all sites. Belegiš – Stojića Gumno and Karaburma in contrast show a preference for double cord impressions, and this is a technique that also appears on vessels at Kaluđerske Livade and Surčin, but on no other sites. Quadruple cord impressions appear at the sites of Ilandža, Surčin, Vatin and Vršac – Stari Ludoš. Single cord only appears at Kaluderske Livade, and pseudo cord impressions only appear at Ilandža and Surčin.

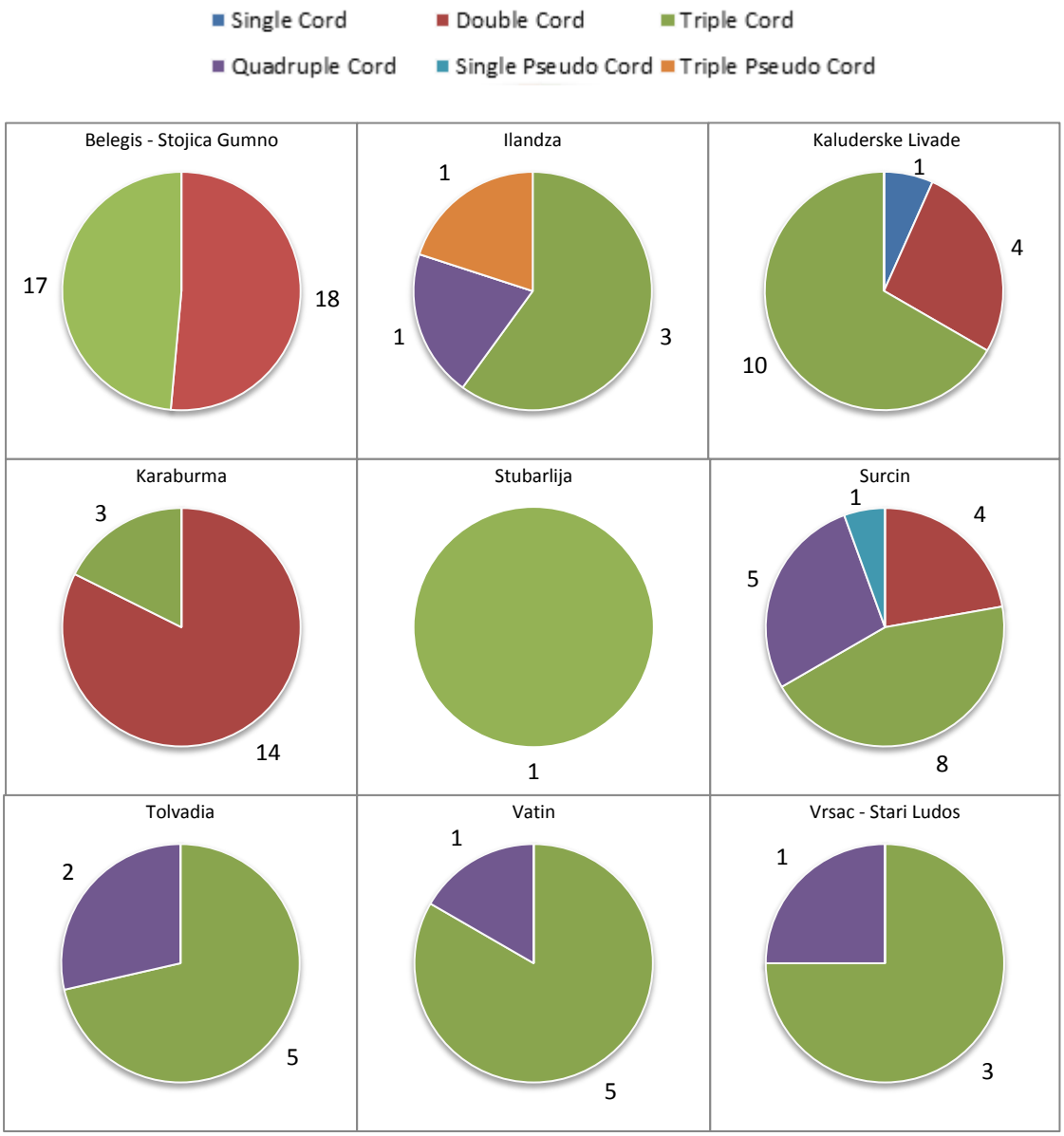


Figure 6.8. Frequency of Cord Impression techniques at each Site

Figure 6.8 shows that Belegiš – Stojića Gumno and Karaburma display similar use in cord techniques, creating either double or triple impressions. Tolvadia, Vatin and Vršac – Stari Ludoš also demonstrate a similar range of techniques, this time either triple or quadruple cord impressions. The sites of Kaluđerske Livade and Surčin show the most ranges in techniques.

Incision Technique (Figure 6.9)

Figure 6.9 clearly highlights that all sites show a high frequency of triple incised decorative techniques. The sites of Belegiš – Stojića Gumno, Karaburma and Surčin also display the use both single incised technique and double incised technique, in comparatively smaller frequencies. Single incised decoration also appears at Tolvadia and the double incised techniques also appear on vessels from Kaluđerske Livade.

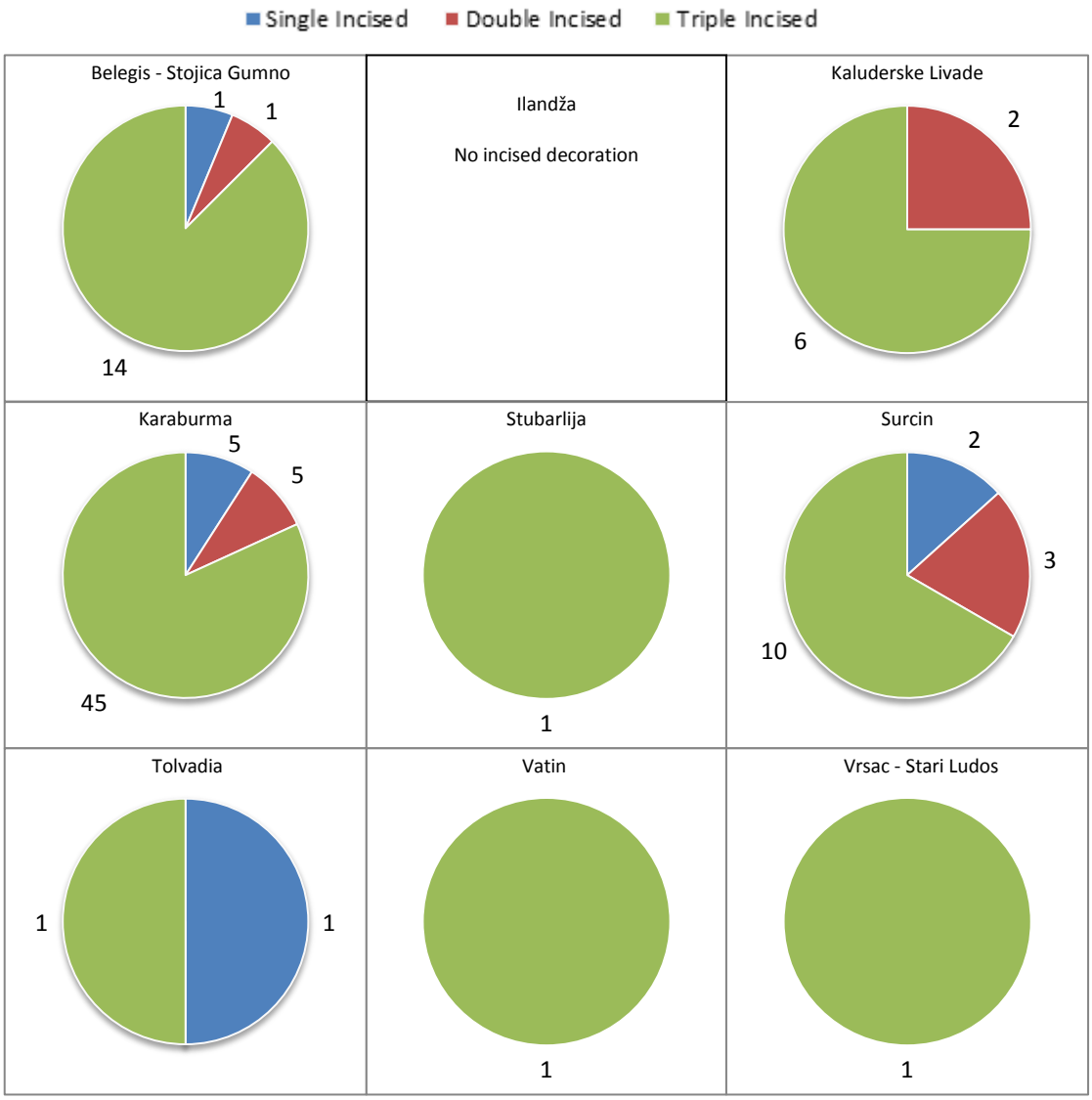


Figure 6.9. Frequency of incision techniques at each Site

Impressed Decoration (Figure 6.10)

As figure 6.10 demonstrates, large impressed decoration features on vessels from the sites of Belegiš – Stojića Gumno, Ilandža, Vatin and Vršac – Stari Ludoš. Medium impressed decoration occurred on vessels at Karaburma, Surčin, Tolvadia and Vršac – Stari Ludoš, and small impressions appear on vessels from Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš. No clear pattern emerges here, indicating that on each site, makers were impressing their vessels in unique ways.

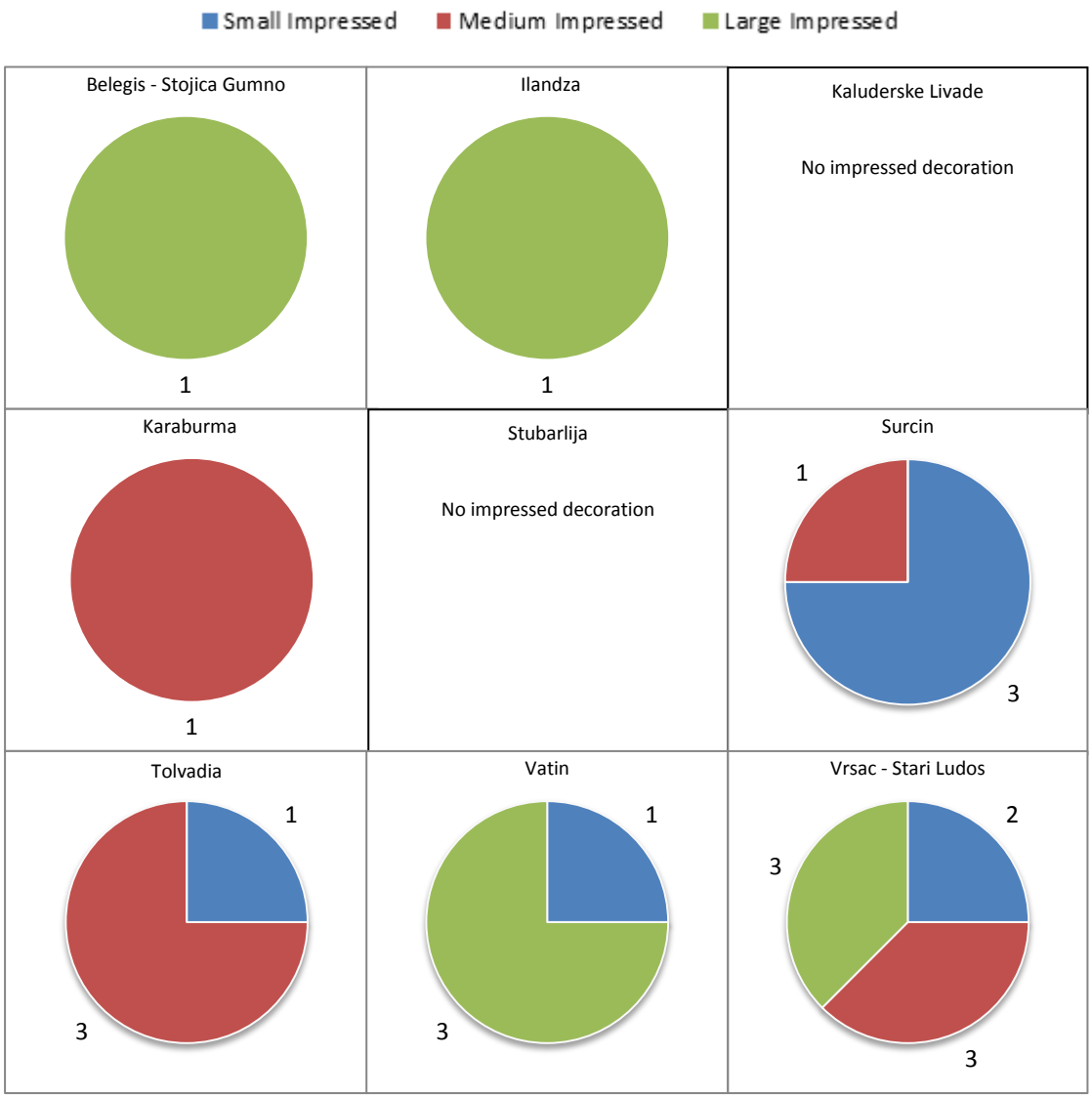


Figure 6.10. Frequency of impression techniques at each site

Figure 6.10 shows that there were differences in the impressing techniques used between sites. No clear pattern emerges. Yet the range in impression execution is limited, although perhaps this is due to small numbers.

Inlay Technique (Figure 6.11)

The site of Stubarlija is the only site that displays the use of inlay. 1 vessel demonstrates the use of inlaid impressed decoration and 1 has inlaid incisions.

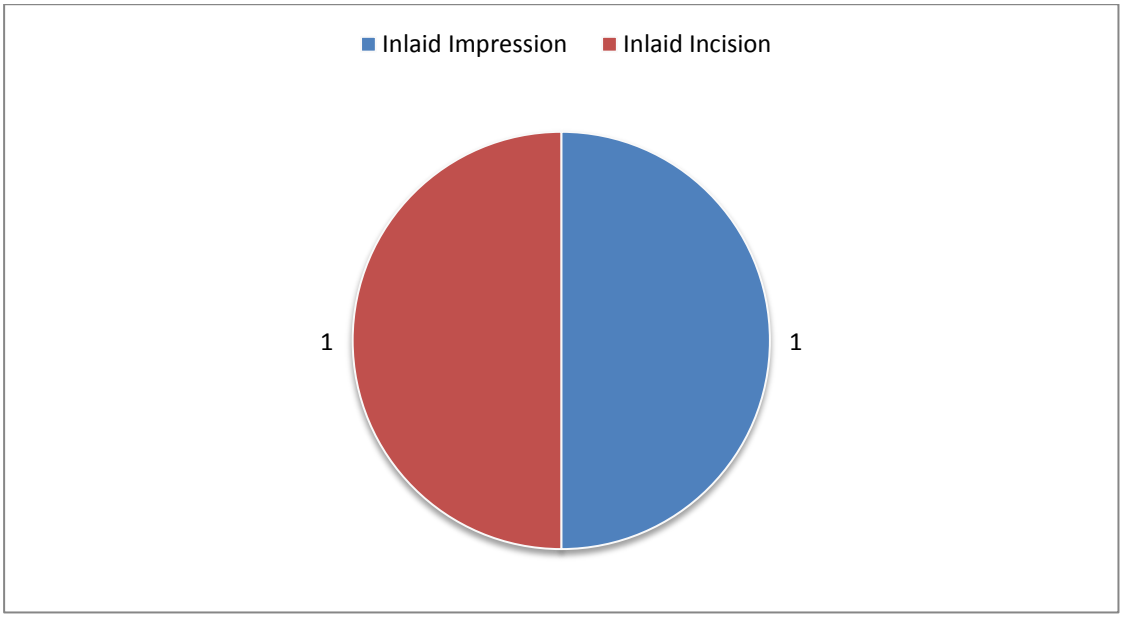


Figure 6.11. Frequency of Inlay Techniques at Stubarlija

Applied Technique (Figure 6.12)

As shown in figure 6.12, all sites demonstrate applied decoration in high frequencies. The sites of Tolvadia, Vatin and Vršac – Stari Ludoš particularly stand out, as they also display vessels with applied and impressed decoration and applied and incised decoration. The sites of Belegiš – Stojića Gumno, Kaluđerske Livade and Surčin demonstrate instances of applied and impressed techniques and Karaburma has vessels with applied and incised decoration.

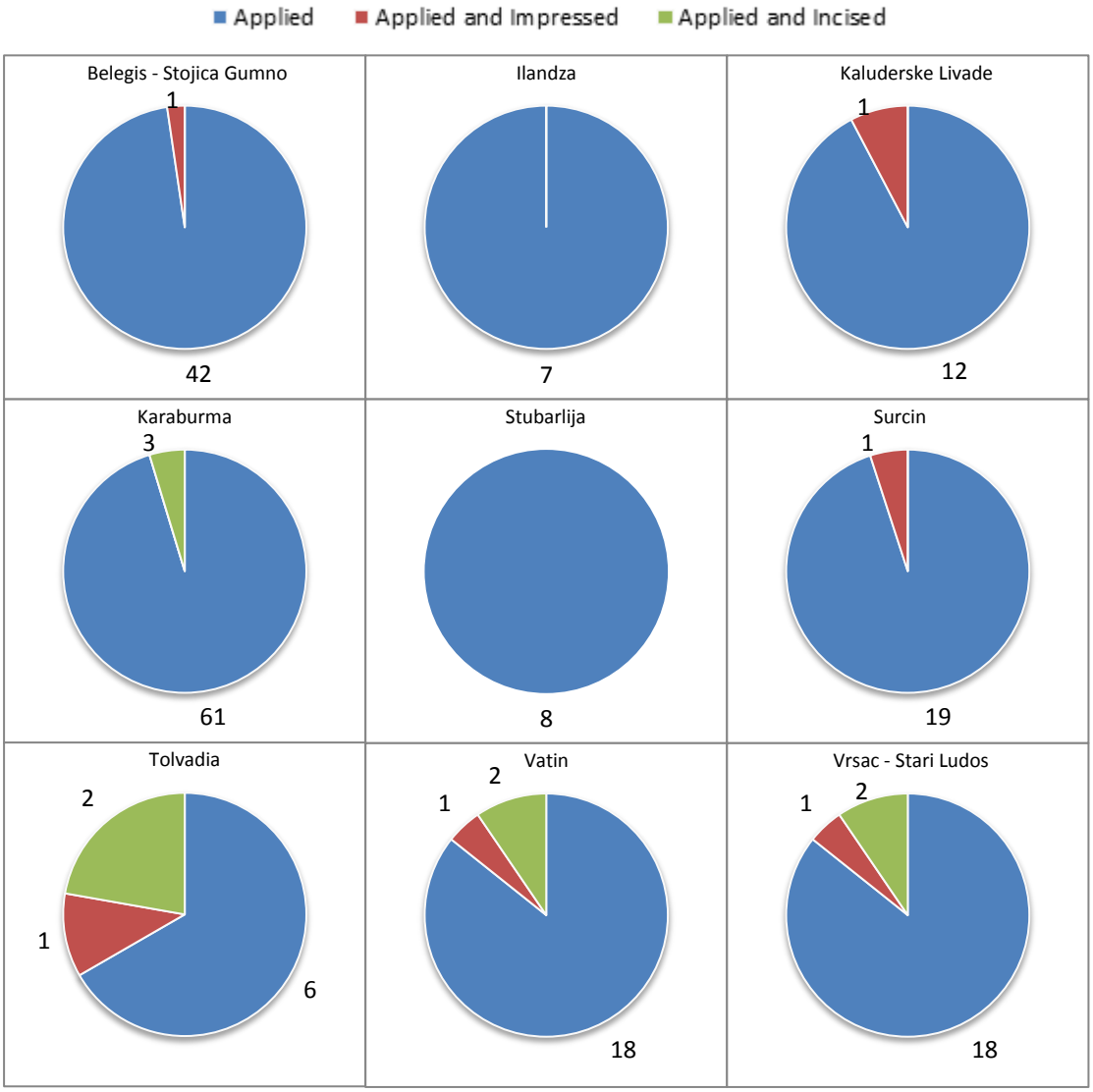


Figure 6.12. Frequency of Applied Decoration at Sites

Figure 6.12 shows that Belegiš – Stojića Gumno and Kaluđerske Livade have the same limited range of applied decoration. The sites of Tolvadia, Vatin and Vršac – Stari Ludoš have a wider range of applied decoration.

Faceting Technique (Figure 6.13)

Figure 6.13 indicates that the sites of Kaluđerske Livade, Stubarlija, Vatin and Vršac – Stari Ludoš display facetted decoration with large gaps, suggestive of a similar technique. In contrast, Belegiš – Stojića Gumno and Karaburma only display faceting with small gaps. Surčin stands out as a site because both types of faceting technique appear, suggestive of maker's familiarity with the two different techniques.

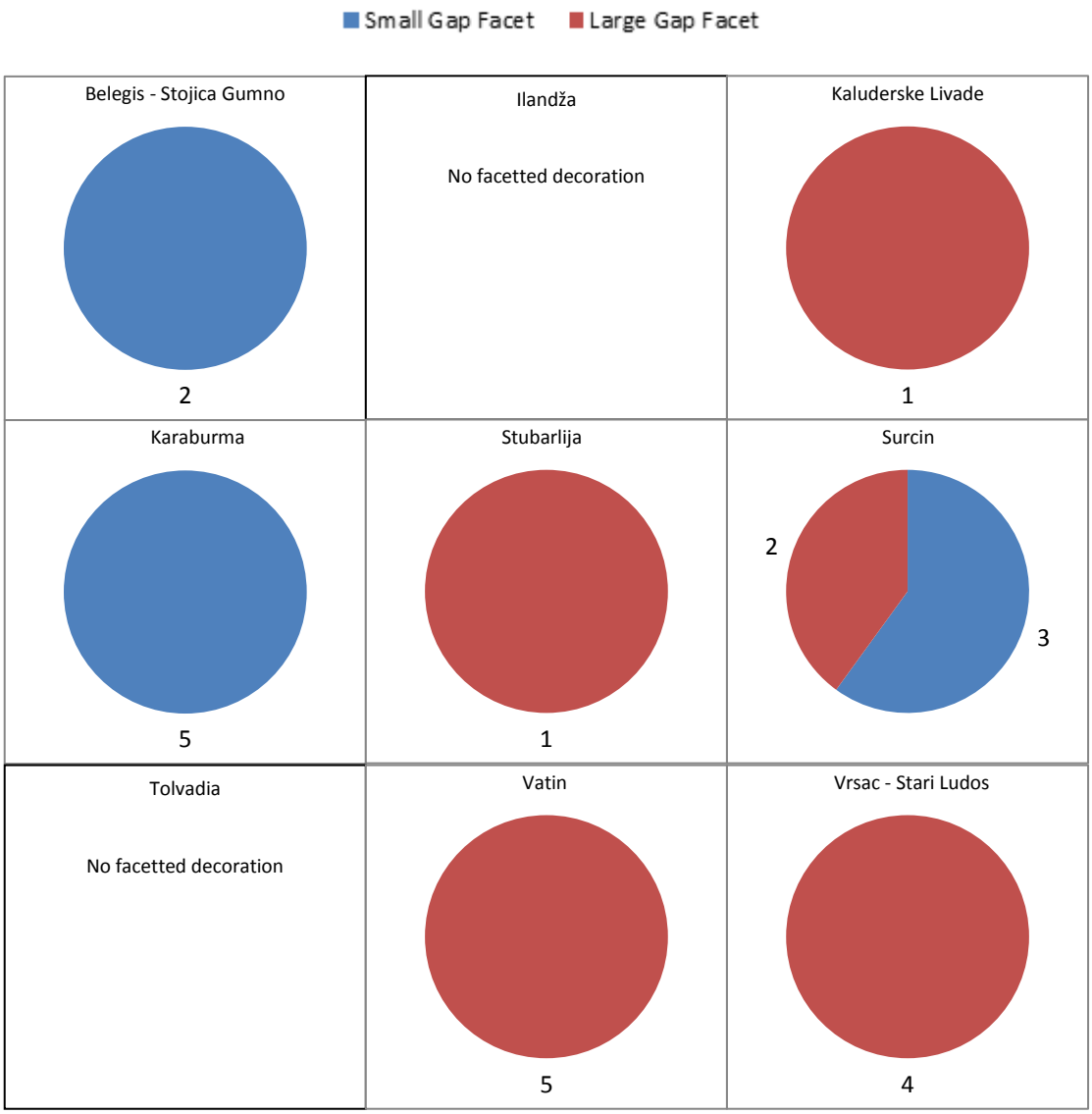


Figure 6.13. Frequency of Faceting Technique on all Sites

The sites of Belegiš – Stojića Gumno and Karaburma display the creation of facets that have a small gap between them. In comparison, Kaluđerske Livade, Stubarlija, Vatin and Vršac – Stari Ludoš exhibit facets with a wide gap between them indicative of a different technique. Surčin is the only site that displays the use of both techniques.

Fluting Technique (Figure 6.14)

As displayed in figure 6.14, only fluting of the thick variety appears on vessels at Stubarlija and Vršac – Stari Ludoš. Belegiš – Stojića Gumno, Kaluđerske Livade, Surčin and Vatin stand out as having similar proportions of thick and thin fluting, although the thick fluting technique is more prevalent. The thin fluting technique also appears on vessels from Karaburma.

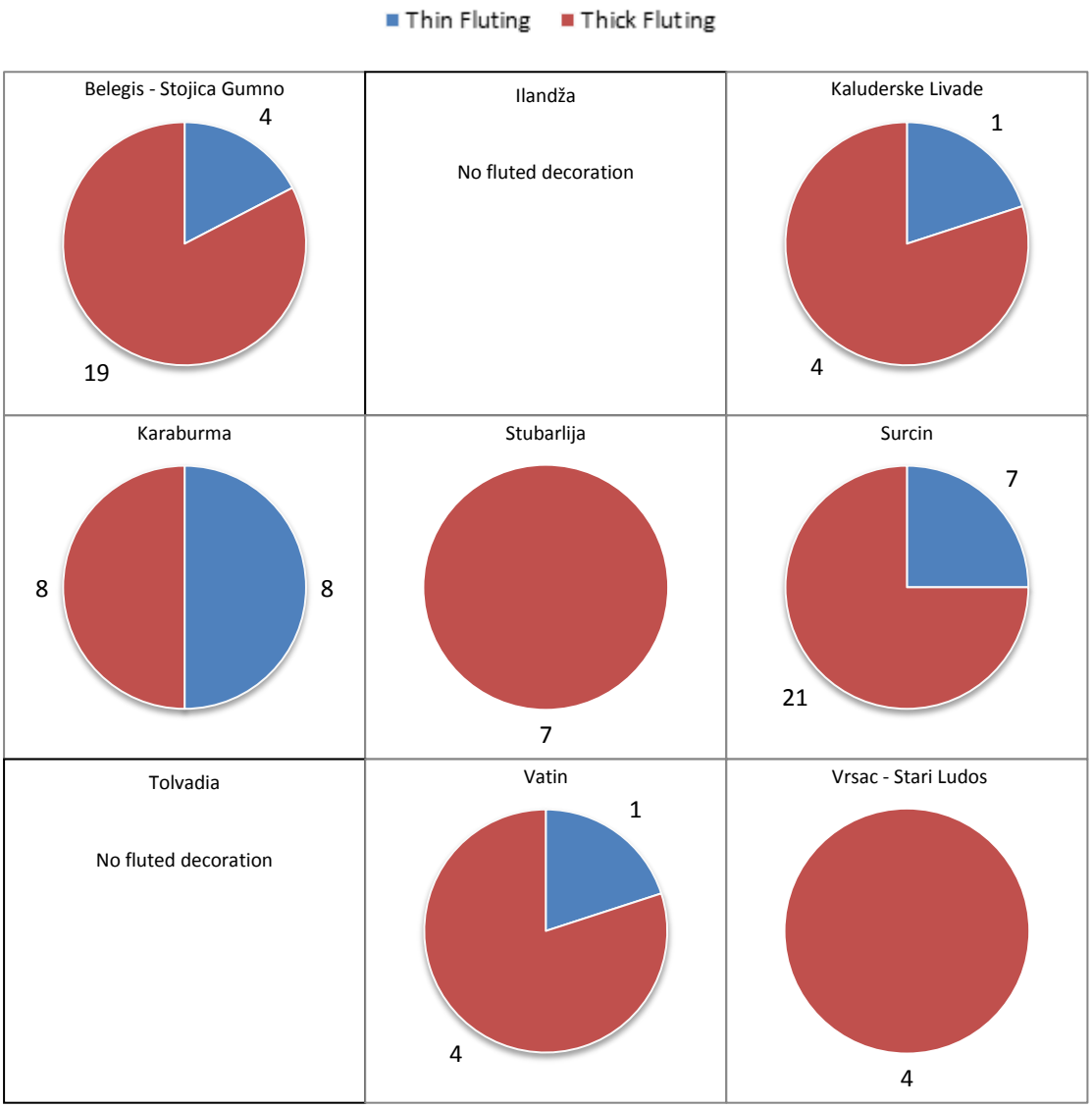


Figure 6.14. Frequency of Fluting Techniques on all Sites

Figure 6.14 shows that two techniques of fluting, creating either small or thin channels, were used at the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma, Surčin and Vatin. In comparison, the sites of Stubarlija and Vršac – Stari Ludoš only demonstrate thick fluting.

Figures 6.8 to 6.14 show that there was variability in the articulation of decorative techniques highlighting that each site drew upon a similar repertoire of decorative techniques in different ways. Vessels from the sites of Tolvadia, Vatin and Vršac – Stari Ludoš show similarity in the application of decorative methods, particularly for cord impression, incised decoration and applied decoration. These sites are in close relatively proximity to each other and therefore it can perhaps be deduced that makers at these sites were interacting with each other and expressing Belegiš manufacturing methods in similar ways.

6.1.3 Execution

Within Chapter 2 it was argued that gesture is a key aspect of technological practice, siting at the heart of technical execution. Exploration of technical execution therefore enables insight into how variation within an assemblage may be generated. Once again, the technological traces that inform most of differences in execution are related to decorative execution of cord impression, incision, impression, faceting and fluting. Due to the availability of the material, a discussion of gesture is limited to the sites of Ilandža, Stubarlija, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš. The data from these sites is presented below.

Decoration

Cord Impressing (Figures 6.15 and 6.16)

Figure 6.15 shows that the sites of Ilandža, Stubarlija and Vršac – Stari Ludoš display only neat cord impressions, suggestive of a controlled technique. In addition to neat cord impressions, the sites of Surčin, Tolvadia and Vatin also display rough cord imprisons, albeit in a much lower frequency. Figure 6.16 indicates that the sites of Ilandža, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš display both light cord impressions and deep cord impressions. At Tolvadia and Vatin, the higher frequency is light impressions, whereas at Ilandža and Surčin, deep impressions form the higher frequency.

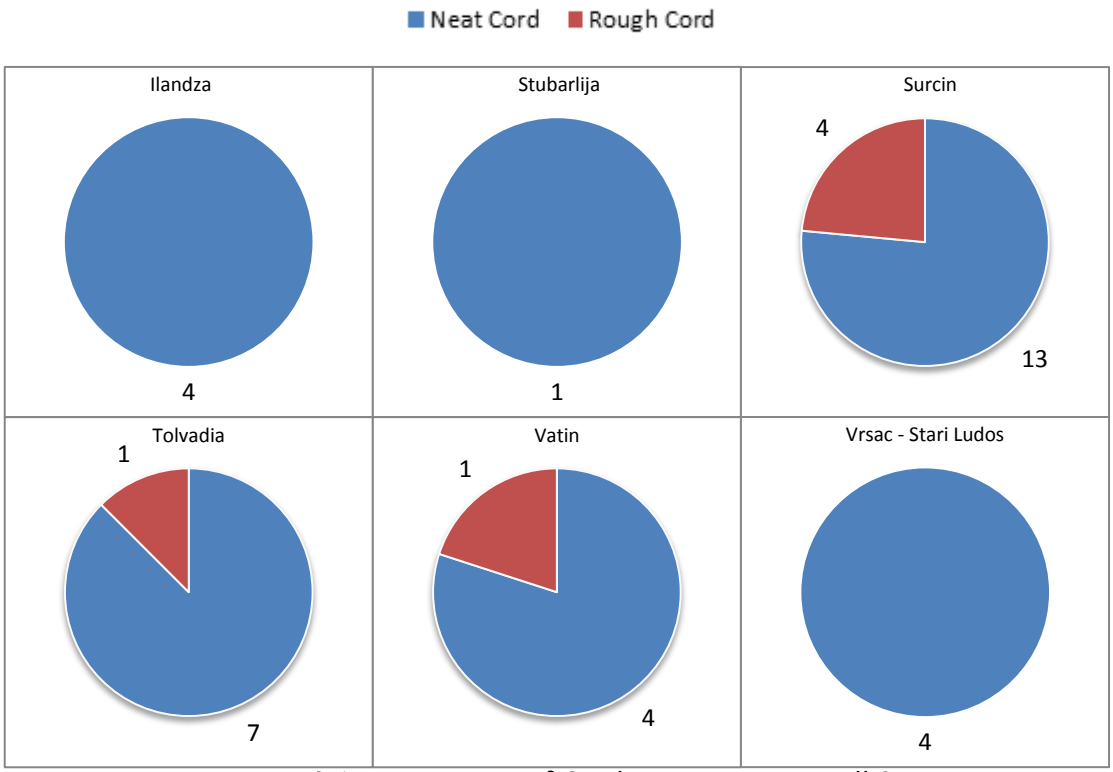


Figure 6.15. Frequency of Cord Impressions on all Sites

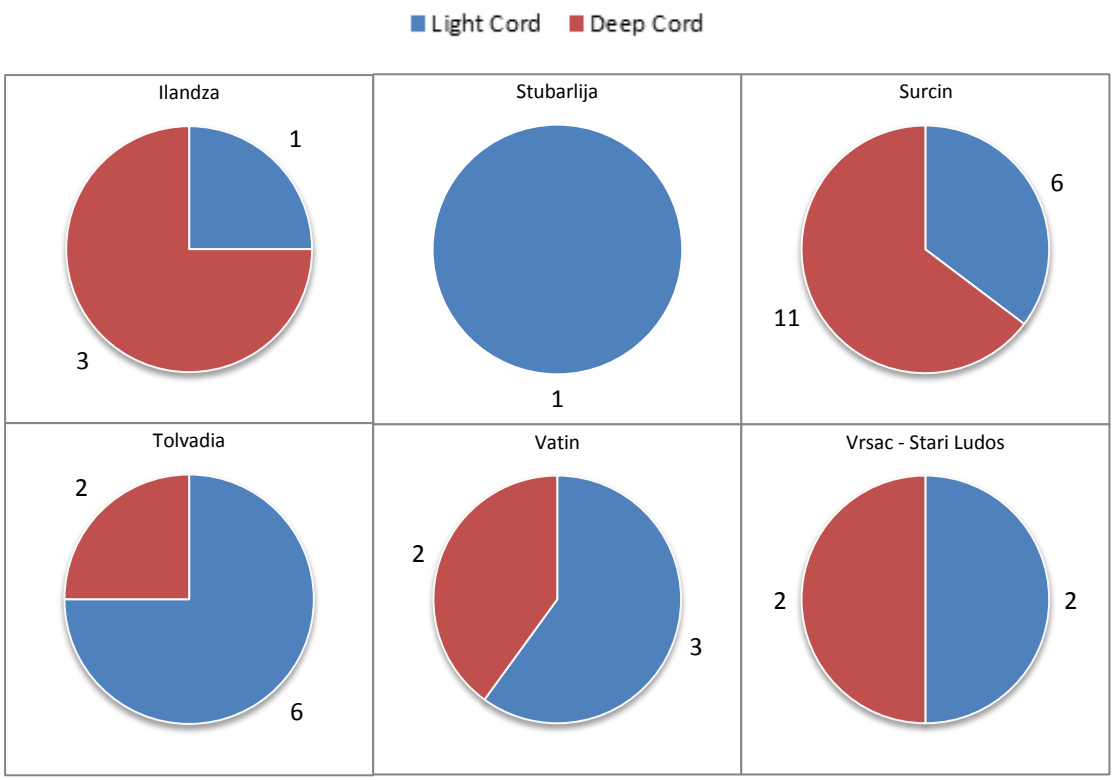


Figure 6.16. Frequency of Cord Impressions on all Sites

Figures 6.15 to 6.16 show that there is variation in the execution of cord impressing across sites. Although no clear pattern emerges, the majority of sites display vessels with both neat and rough impressions and light and deep impressions. The exception to this is Ilandža, where all of the impressions fall into the neat category.

Incising (Figures 6.17 and 6.18)

Figure 6.17 shows that the sites of Stubarlija, Toldavia, Vatin and Vršac – Stari Ludoš display incised decoration that only falls within the neat category. The anomaly to this is Surčin, where the highest frequency of incised vessels is within the rough category. In figure 6.18, the sites of Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš have examples of light incised decoration. The sites of Stubarlija, Surčin and Tolvadia display deep incision and both light and deep incisions occur on the sites of Surčin and Tolvadia, in almost equal measure.

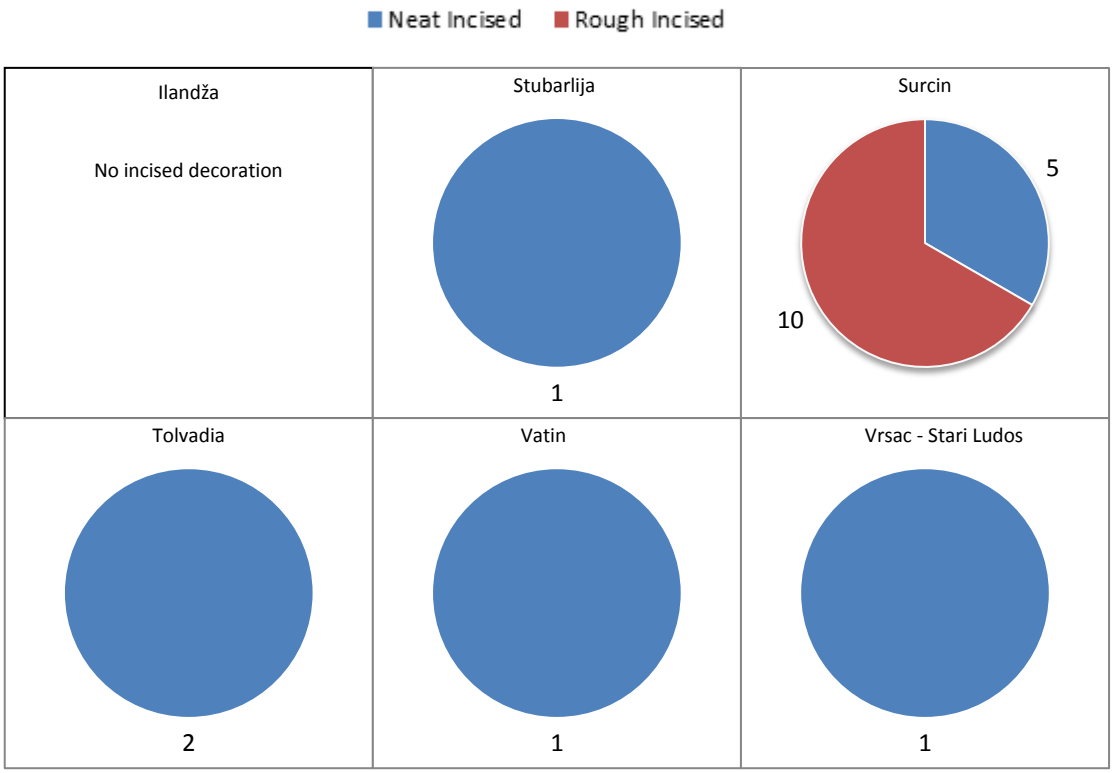


Figure 6.17. Frequency of Incised Decoration on all Sites

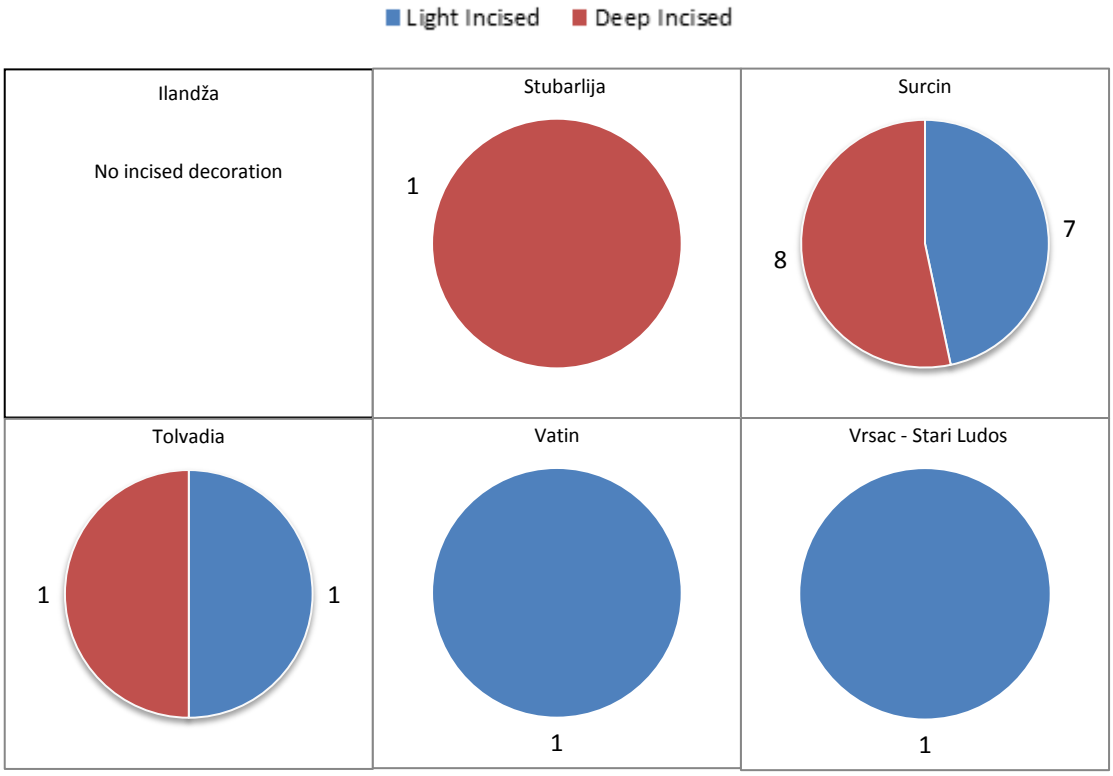


Figure 6.18. Frequency of Incised Decoration on all Sites

The site of Surčin shows the highest frequency of both neat and rough decoration.

Impressing (Figure 6.19)

Figure 6.17 shows that the sites of Stubarlija, Toldavia, Vatin and Vršac – Stari Ludoš display incised decoration that only falls within the neat category. The anomaly to this is Surčin, where the highest frequency of incised vessels is within the rough category. In figure 6.18, the sites of Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš have examples of light incised decoration. The sites of Stubarlija, Surčin and Tolvadia display deep incision and both light and deep incisions occur on the sites of Surčin and Tolvadia, in almost equal measure.

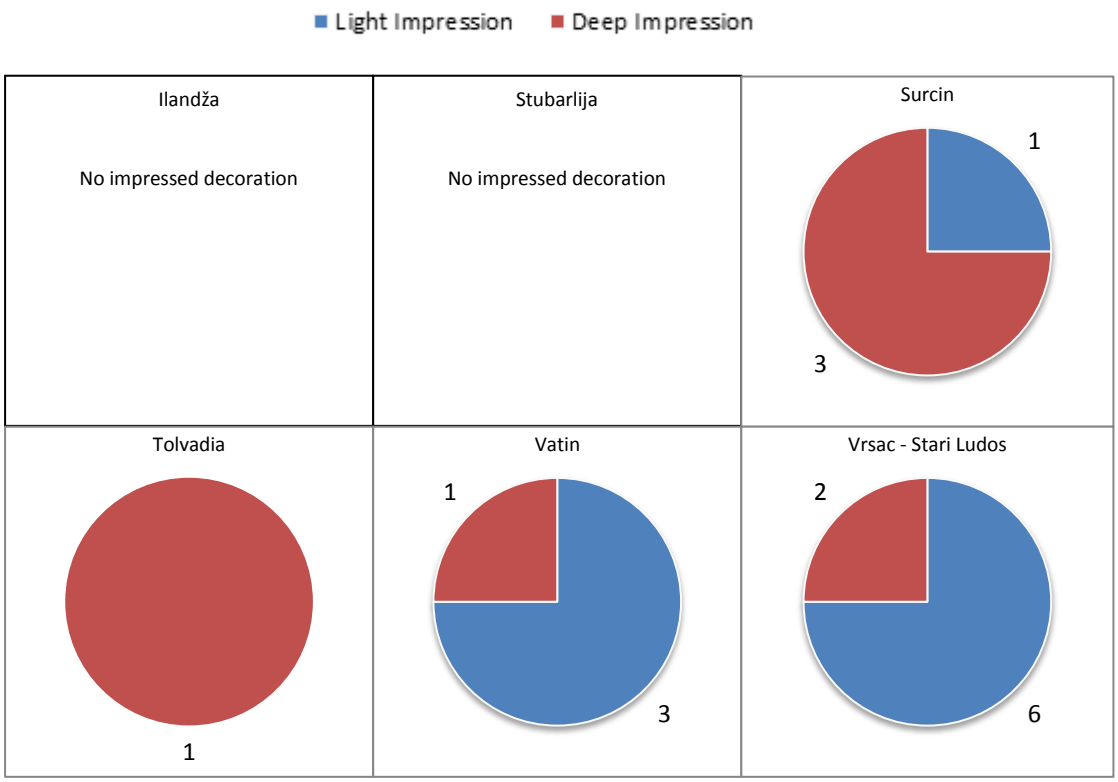


Figure 6.19. Frequency of Impressed Decoration on all Sites.

Vatin and Vršac – Stari Ludoš have more light impressions than deep. Contra to this, Surčin displays a higher frequency of deep impressed decoration.

Faceting (Figure 6.20)

Figure 6.20 shows that the majority of sites have vessels that only display deep faceting. The exception to this is Surčin where vessels display either light faceting or deep faceting indicative of two different types of technical execution.

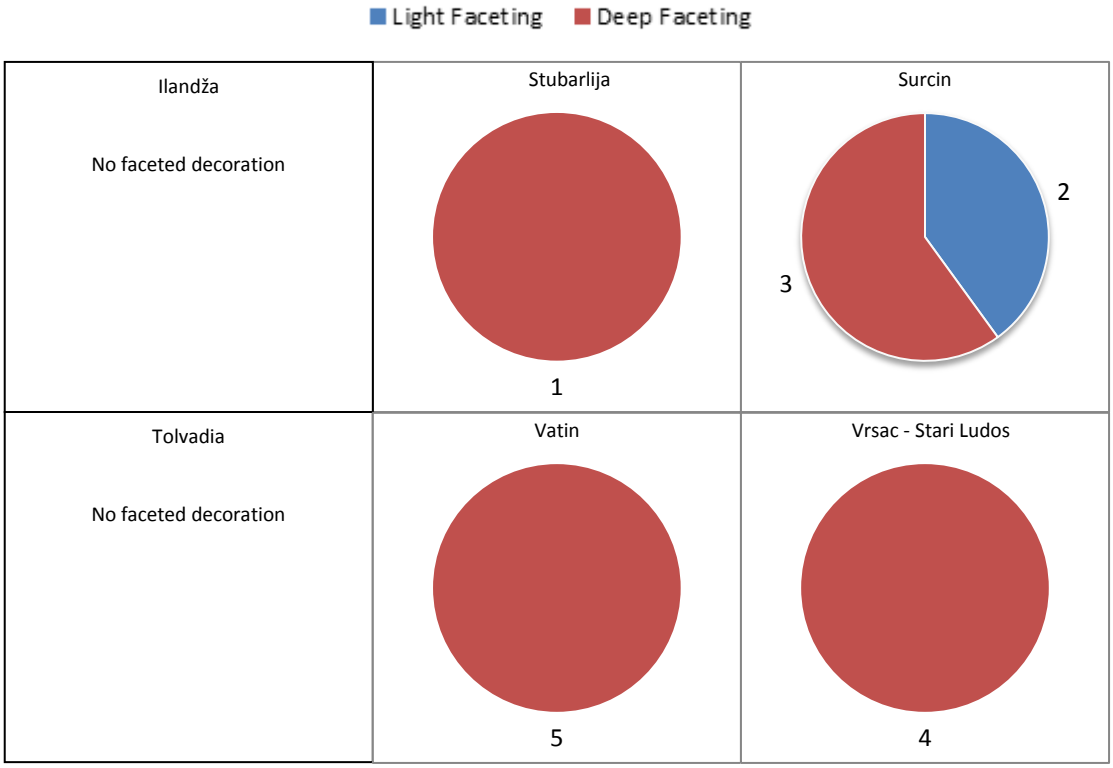


Figure 6.20. Frequency of Faceting on all Sites

Figure 6.20 shows that the majority of sites have vessels that only display deep faceting. The exception to this is Surčin where vessels display either light faceting or deep faceting indicative of two different types of technical execution.

Fluting (Figure 6.21)

Figure 6.21 shows that the sites of Stubarlija and Surčin display both light fluting and deep fluting. In contrast Vatin only exhibits traces of light fluting and Vršac – Stari Ludoš only has vessels with deep fluting.

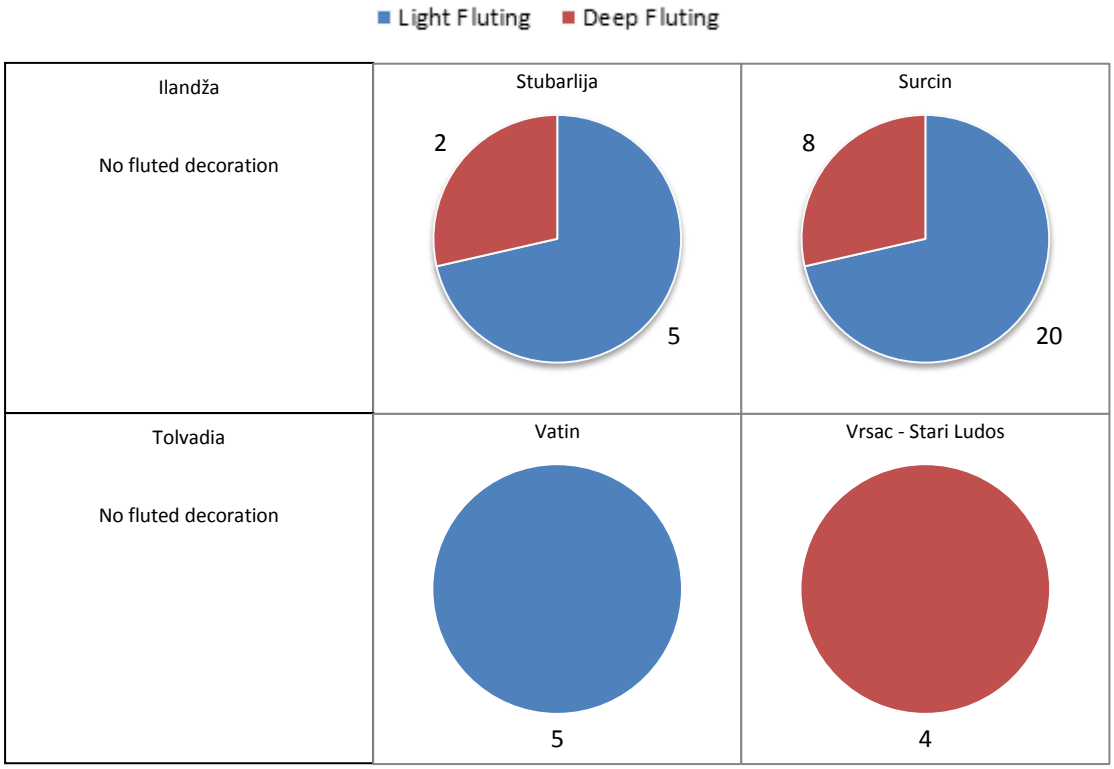


Figure 6.21. Frequency of Fluting on all Sites

Figure 6.21 shows that the sites of Stubarlija and Surčin display both light fluting and deep fluting. In contrast Vatin only exhibits traces of light fluting and Vršac – Stari Ludoš only has vessels with deep fluting.

Despite sometimes low frequencies, Figures 6.15 to 6.21 demonstrate that there was variation in the execution of decorative techniques at all sites. Sites display both neat and rough application of cord impressing techniques indicating slight variation in gesture across sites. The sites of Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš only display neat application of incising techniques. Surčin on the other hand has vessels that display both neat and rough incised decoration indicative of variation between makers. Another signaller of differences in technical execution is the depth of impression, incision, facets or flutes. Variation between light and deep categories occur across sites, although noticeably only light fluting appears on vessels from Vatin and deep fluting on the vessels from Vršac – Stari Ludoš. These variations in the execution of techniques are indicative of differences in habitus, signalled by differences in pressure applied to the vessel during application of decoration, and this is discussed in more detail in section 6.2.3.

6.4.1. Vessel Size

Examination of decorative practice has demonstrated that gesture plays a role in Belegiš decorative variation. Yet it has been argued that variation in vessel size can also be directly linked to differences in technical gesture (Kohring Pers. Comm). In order to probe this suggestion, data relating to vessels sizes is analysed below. The range and means averages are given particular attention in order to investigate differences between sites. Once again, it must be stressed that only vessels from Ilandža, Stubarlija, Surčin, Tolvadia, Vatin and Vršac – Stari Ludoš could be measured.

Rim Diameter

The data presented below in Table 6.1 shows that vessels from Surčin have the biggest range of rim sizes (23cm.) and Ilandža vessels have the smallest range of rim diameters (5.5cm.). However, the mean rim sizes across these sites are relatively similar.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	23	28.5	5.5	24.8
Stubarlija	9	9.5	23	13.5	19
Surčin	20	13	36	23	21.7
Tolvadia	6	20.5	24	3.5	21.8
Vatin	13	13	30	17	22.2
Vršac – S. Ludoš	8	20	27.5	7.5	24.5

Table 6.1. Belegiš Rim Diameters

Neck Diameter

Table 6.2 demonstrates that once again Surčin has vessels with the largest range in neck diameters (20cm.) and Ilandža has the smallest range in neck diameters (3.5cm.). This may speak of more standardised sizes at Ilandža, particularly because the smallest neck diameter (18.5cm.) and the largest neck diameter (22cm.) only fall short of the neck diameter mean of 20.1cm. Stubarlija demonstrates the smallest mean neck diameter of 16.4cm and the site of Surčin has the largest at 21.8cm.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	18.5	22	3.5	20.1
Stubarlija	10	8	23	15	16.4
Surčin	26	12	32	20	21.8
Tolvadia	6	15.5	26	10.5	19.4
Vatin	16	15	22	7	17.9
Vršac – S. Ludoš	8	15	26	11	19

Table 6.2. Belegiš Neck Diameters

Belly Diameter

At Surčin, the range of belly diameters is 37cm, the largest out of all the sites. Once again, Ilandža has the smallest range (4.5cm.). Ilandža has the biggest mean (32.2cm.), indicating that on average Ilandža vessels are wider in comparison with vessels from other sites (Table 6.3).

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	28.5	33	4.5	32.2
Stubarlija	20	17	29	12	24.2
Surčin	30	19	56	37	30.3
Tolvadia	8	22	34	12	24.2
Vatin	17	18	38	20	28.3
Vršac – S. Ludoš	21	15.5	34.5	19	28.1

Table 6.3. Belegiš Maximum Vessel Diameters (Belly)

Base Diameter

Table 6.4 shows that vessels from Surčin have the largest range of base diameters (6cm.) and Tolvadia has the smallest range of 3cm. The sites of Ilandža, Surčin and Vatin demonstrate similar mean base diameter (9.2 – 9.3cm.) highlighting similarity across sites.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	7.5	11	3.5	9.2
Stubarlija	20	5.5	8.5	3	7.3
Surčin	72	7	13	6	9.3
Tolvadia	8	6	9	3	8
Vatin	25	7.5	12	4.5	9.3
Vršac – S. Ludoš	29	5.5	11	5.5	8.7

Table 6.4. Belegiš Base Diameters

Handle Width

Table 6.5 demonstrates that the ranges are similar across sites. It also shows that the site of Surčin has the lowest mean handle width, at 2.3cm. The remaining sites have similar means (3.4cm.) showing similarity across sites.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	2.5	4	1.5	3.4
Stubarlija	17	2	3.5	1.5	2.8
Surčin	67	1.5	3.5	2	2.3
Tolvadia	8	3	4	1	3.3
Vatin	25	2.5	4.5	2	3.4
Vršac – S. Ludoš	29	2.5	4	1.5	3.4

Table 6.5. Belegiš Handle Widths

Handle Height

Table 6.6 again shows similar ranges in in handle height between sites, although the site of Surčin again shows the largest range (2.5cm.) in comparison to Ilandža

that has the least range (1cm.). The site of Vatin displays the smallest mean handle height (2.5cm.) and Ilandža has the largest mean height at 3.2cm.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	3	4	1	3.2
Stubarlija	17	2	3.5	1.5	2.6
Surčin	67	1.5	4	2.5	2.8
Tolvadia	8	2.5	3	1.5	3
Vatin	25	2	3	1	2.5
Vršac – S. Ludoš	29	2	4	2	2.9

Table 6.6. Belegiš Handle Heights

Neck to Shoulder Angles

Once again, the data in Table 6.7 shows that the site of Surčin shows the largest range in neck to shoulder angles (20 degrees) and Ilandža has the smallest range (10 degrees). The mean angle across the majority of sites is 75 degrees, with the exception of Ilandža (80 degrees) and Surčin (85 degrees). This shows that in terms of neck to shoulder angles, vessels across sites were frequenctly made to a similar specification.

	Total	Smallest (degrees)	Largest (degrees)	Range (degrees)	Mean (degrees)
Ilandža	7	80	90	10	80
Stubarlija	18	70	85	15	75
Surčin	55	70	90	20	85
Tolvadia	8	70	90	20	75
Vatin	25	70	85	15	75
Vršac – S. Ludoš	29	70	85	15	75

Table 6.7. Belegiš Neck to Shoulder Angles

Base Angles

The data shown in Table 6.8 highlights that the site of Ilandža demonstrates the smallest range in base angles (10 degrees) and Surčin has the highest range (30 degrees). Each site has a mean between 120 and 125 degrees meaning that there was similarity across sites.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	120	130	10	125
Stubarlija	18	120	135	15	120
Surčin	55	110	140	30	125
Tolvadia	8	120	130	10	125
Vatin	25	110	125	15	120
Vršac – S. Ludoš	29	110	125	15	120

Table 6.8. Belegiš Base Angles

Neck Height

As Table 6.9 shows, Tolvadia displays the smallest range in neck height (4cm.) and once again Surčin demonstrates the highest range (13 cm.). Stubarlija has the

lowest mean average in neck height at 9.7cm. and Surčin has displays the highest mean neck height, being 15.1 cm.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	12	18	6	15.4
Stubarlija	10	6.5	15	8.5	9.7
Surčin	13	11	24	13	15.1
Tolvadia	6	10	14	4	12.6
Vatin	13	9	18.5	9.5	13.5
Vršac – S. Ludoš	8	10.5	18	7.5	14.3

Table 6.9. Belegiš Neck Height

Whole Vessel Height

In Table 6.10, Tolvadia demonstrates the smallest range in whole vessel heights (5cm.), suggestive of more standardisation. Surčin shows the highest range (22.5cm.). Vessels at Stubarlija are on the whole smaller as indicated by the mean height of 28.7cm. In contrast, vessels at Ilandža have a mean height of 42.8cm.

	Total	Smallest (cm.)	Largest (cm.)	Range (cm.)	Mean (cm.)
Ilandža	7	39	52	13	42.8
Stubarlija	10	17.5	39	21.5	28.7
Surčin	13	21.5	44	22.5	36
Tolvadia	6	39	44	5	39.3
Vatin	13	25	49	24	36.4
Vršac – S. Ludoš	8	33.5	44	10.5	38.4

Table 6.10. Belegiš Whole Vessel Heights

The data described above suggests that there are some differences in size within and between sites. It is interesting to note that several of the tables show that Ilandža often has the smallest range in size attributes, indicating similarity of vessel sizes within this single site. This could suggest more standardisation in size requirements and therefore potentially standardisation in gestures. In contrast, the site of Surčin often demonstrates the largest range in sizes, hinting at less standardisation. It is, however, important to note that these results may be affected by sample sizes and one would perhaps expect to see greater variation in larger samples.

These differences in size across and within sites may suggest some differences in maker gesture; the production of larger vessels may have required a slightly different set of gestures to that of a smaller vessel.

6.2 Discussion

The data presented above can be used to discuss practice at two scales; the scale of community and scale of the individual. It is suggested that by exploring *motif presence and absence*, *motif frequency* and the *application of decorative method (technique)* within the dataset, it is possible to identify communities of practice, groups of makers who practice in similar ways. It is also put forward that by focussing on the *execution* of decoration in relation to gesture, the technical behaviour of the individual can be elucidated. It is proposed that a focus on practice at the level of community and the individual enables insight into the processes that contribute to material similarity and difference.

6.2.1 Communities of Practice

In Chapter 2 communities of practice were argued to be groups of makers that articulate their craft in similar ways (Wenger 1998). The dataset described above displays patterns of variation which indicate that certain sites drew upon the Belegiš tradition in comparable ways. Based on this, it is suggested that through the exploration of motif use and decorative technique, three main communities of practice can be identified. They appear to accord with geographical location and therefore have been termed as; eastern Srem, southern Banat and southern Bačka (Figure 6.22). The data that defines these communities is outlined in greater detail and is discussed below.

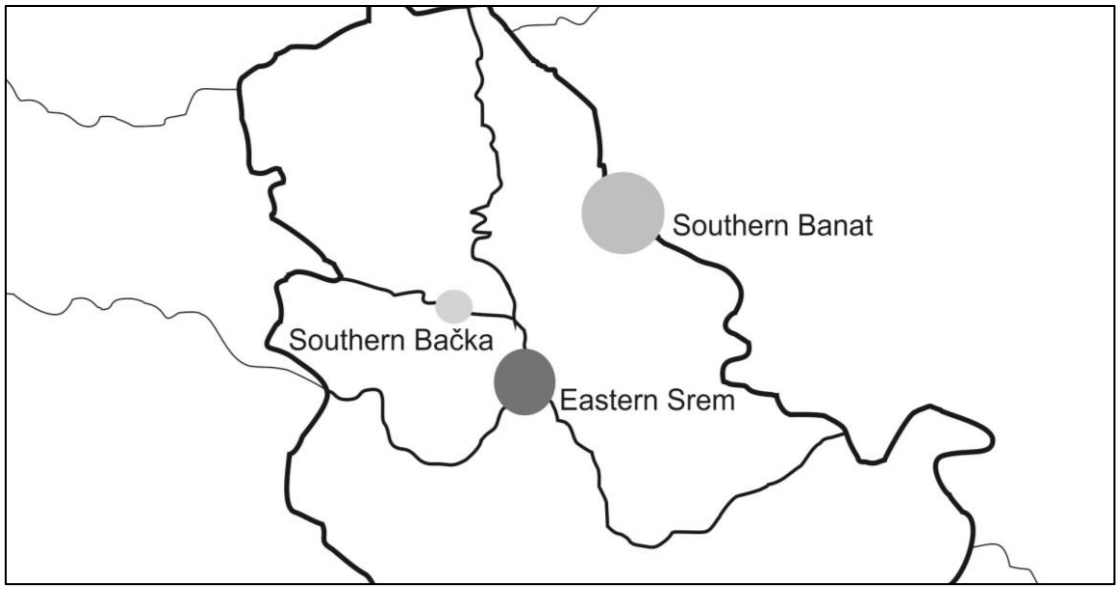


Figure 6.22. Map showing geographical location of communities of practice

Community of Practice One: Eastern Srem

It is suggested that the eastern Srem community of practice comprises the sites of Belegiš-Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin. The identification of this community of practice is based most noticeably on the presence of motifs

specific to this group of sites as well as a comparatively high preference for motifs that appear in lesser frequencies at other sites.

Presence and Absence of Motifs (Figure 6.23)

In section 6.1, Figures 6.1, 6.2, 6.3, 6.6 and 6.7 demonstrated that only the sites within eastern Srem group display the use of M1b motif on vessel necks and M7a, M8b, M9d and M9e on the vessel bellies. This is therefore a repertoire of motifs that is unique to makers in this area (Figure 6.23). As Figure 6.24 highlights, there was variation in the ways in which each of these motifs were assembled meaning that each articulation of motif is varied in some way. This is discussed in more detail in Chapter 7.

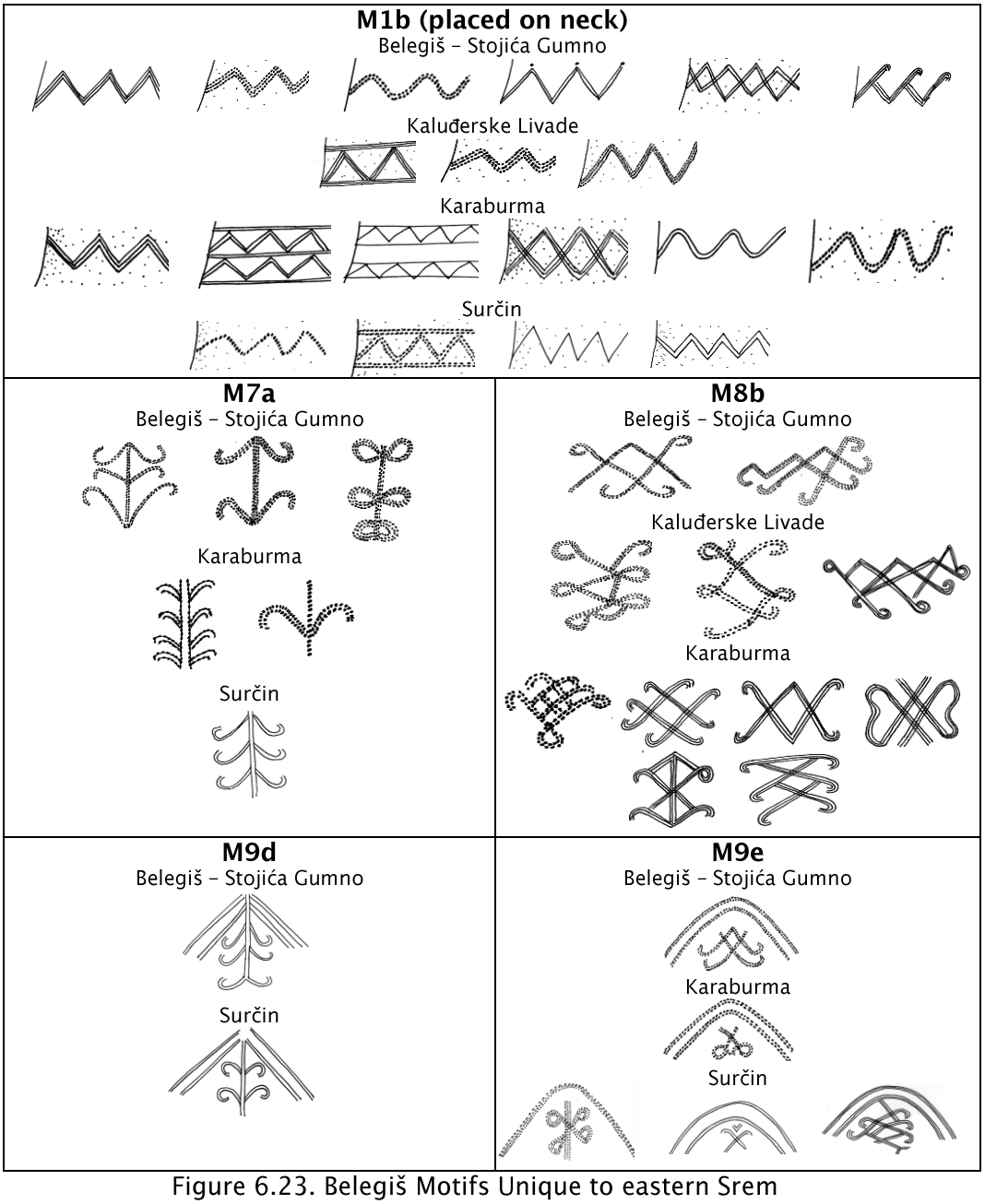


Figure 6.23. Belegiš Motifs Unique to eastern Srem

Frequency of Motifs (Figure 6.24)

Within section 6.1, Figures 6.6. and 6.7 demonstrated that there is a high frequency of vessels that display motif M6a. Despite the fact that this motif also occurs on two vessels from Tolvadia and one vessel from Vršac – Stari Ludoš, the sites within the eastern Srem group demonstrate a preference for M6a. This is therefore argued to be another defining aspect of practice that binds these sites together in terms of similar practice.

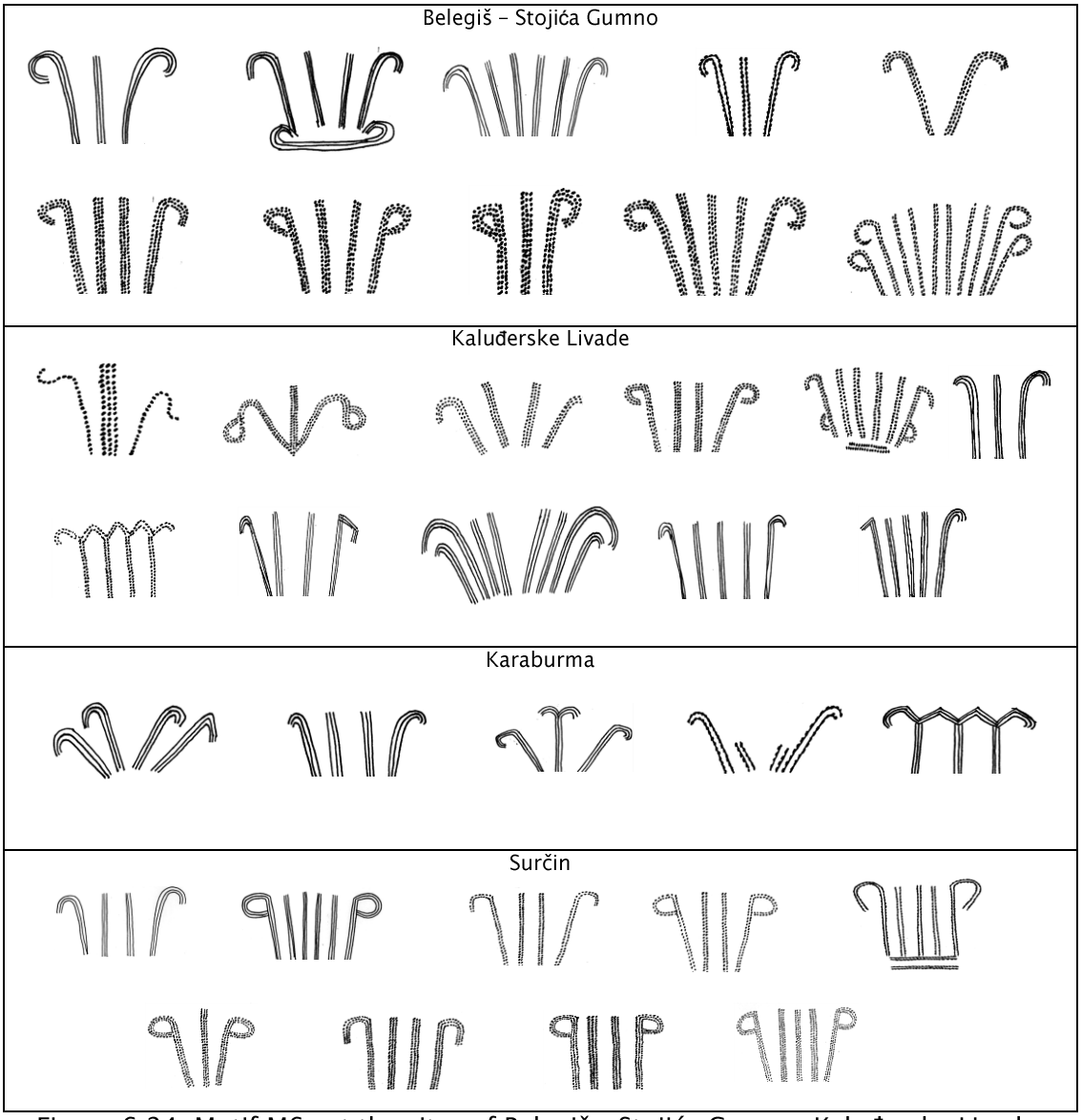


Figure 6.24. Motif M6a at the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin.

Figure 6.24 highlights that the configuration of motif M6a was also varied in terms of the number of stems and the curvature of the outside loops. This communicates an underlying conceptual understanding of appropriate motif which directly relates to the principles of Belegiš tradition that were set out in Chapter 5. However, in terms of practice and therefore the expression of Belegiš manufacturing principles, it shows variability. Once again this is explored further in Chapter 7.

Application of Decorative Method (*Technique) (Figures 6.25 to 6.31)*

It was demonstrated in Chapter 5 that the motifs described above were created through either methods of impressing cord or by incising. In section 6.1, Figures 6.8 and 6.9 demonstrated that variation occurred in the application of cord impression and incision techniques. At the sites of Belegiš – Stojića Gumno, Kaluđerske Livade and Surčin, the impressing of three strands of cord was prominent. Figure 6.25 shows an example of motif M1b on vessel 20690 from Surčin, created with three strands of cord. Figure 6.26 exhibits an example of M6a from vessel 20762 from Surčin also created with three strands of cord. Figure 6.27 displays an example of motif M8a from vessel 20754 from Surčin that was once again created with the same technique.



Figure 6.25. Vessel 20690 from Surčin displaying triple strand cord impressed



Figure 6.26. Vessel 20762 from Surčin displaying M6a motif created with three strands of cord impressions



Figure 6.27. Vessel 20754 from Surčin displaying M8a motif created with three strands of cord impressions

The data in Figures 6.8 and 6.9 also shows that impressing with two strands of cord was a technique that was used across sites within the eastern Srem group. It was most prominently used at the site of Karaburma but there was variation in preferences in techniques across sites. Figure 6.28 shows an example of motif M6a on vessel 20767 from Surčin that was created with this. Analysis of cord impressions at Surčin conducted by Karina Grömer confirms that these cords would most likely have been made from limebast (in press).



Figure 6.28. Vessel 20767 from Surčin displaying M6a motif created with three strands of cord impressions

Despite the variability in decorative techniques used to articulate decorative motifs, the frequency data shown in Figures 6.8 and 6.9 shows that there were often clear preferences. The most frequently employed technique of incised decoration within sites in the eastern Srem group is triple pronged incision. This indicates a preference for this technique across the group. Figure 6.29 gives an example of motif M1b made up of three incised lines that was created with a sharp tool. The unevenness of the lines on vessel 20730 from Surčin suggests that a single pointed tool was used instead of a comb which would have given evenly distributed incisions. In contrast Figure 6.30 displays an example of a triple incised M6a motif on vessel 20891 from Surčin. The even distribution of the incisions indicates that a three-pronged tool such as a comb was used. Therefore there was variation in the tools used to create incised decoration.

Vessels from the group of eastern Srem sites also display double incised decoration. Figure 6.31 vessel 20890 gives an example of motif M7a from vessel in Surčin that was creating using this technique. This highlights once again variation in technique within the proposed community of practice.



Figure 6.29. Vessel 20730 from Surčin displaying triple incised zigzag on neck



Figure 6.30. Vessel 20891 from Surčin displaying M6a motif created with three strands of cord impressions



Figure 6.31. Vessel 20890 from Surčin displaying M7a motif executed with two-pronged tool.

The data in section 6.1 demonstrates that vessels from the eastern Srem group also display use of faceting and fluting methods, although no pattern emerges that makes the sites of eastern Srem stand out from the other sites included in this study. The data shows an overall preference for facets with small gaps at the sites of Belegiš – Stojića Gumno, Karaburma and Surčin. In contrast, the site of Kaluđerske Livade shows preference for facets with large gaps. Across sites there is an overall higher frequency of thick fluting, indicative of a similar technique. However, thin fluting also appears on all sites within the eastern Srem group.

It is suggested that despite the variability, the sites of Belegiš – Stojića Gumno, Kaluđerske Livade, Karaburma and Surčin can be conceptualised as a community of practice based primarily on the presence of specific motifs and the high frequency of particular decorative techniques. This indicates that they were expressing Belegiš principles of manufacture in similar ways. This is expanded upon in section 6.2.3.

Community of Practice Two: Southern Banat

It is suggested that the southern Banat community of practice consists of the sites of Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš. The identification of this community of practice rests on both the high frequency of certain motifs and the application of decorative methods that are unique to these sites. The data suggests that the sites of Vatin and Vršac – Stari Ludoš additionally display a unique repertoire of motifs. It is argued therefore that these two sites represent a subset group of makers within the southern Banat group.

Absence and Presence of Motifs (Figures 6.32 to 6.38)

Figures 6.1 to 6.7 demonstrated that motif M2b appears on the vessel bellies at Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš. Although applied bosses are a staple aspect of the motif repertoire across all nine sites, the sites of Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš are the only sites where bosses were placed on vessel bellies. The sites of Vatin and Vršac – Stari Ludoš exhibit the use of motifs M3a, M4a and M4b. Although M3a appears on the shoulders of vessels from other sites such as Surčin and Karaburma, its placement on the belly is exclusive to the sites of Vatin and Vršac – Stari Ludoš. This, alongside the use of pseudo handles on the shoulder (M4a and M4b), highlights that Vatin and Vršac – Stari Ludoš stand out together as a subset group of makers. These motifs are discussed in more detail below.

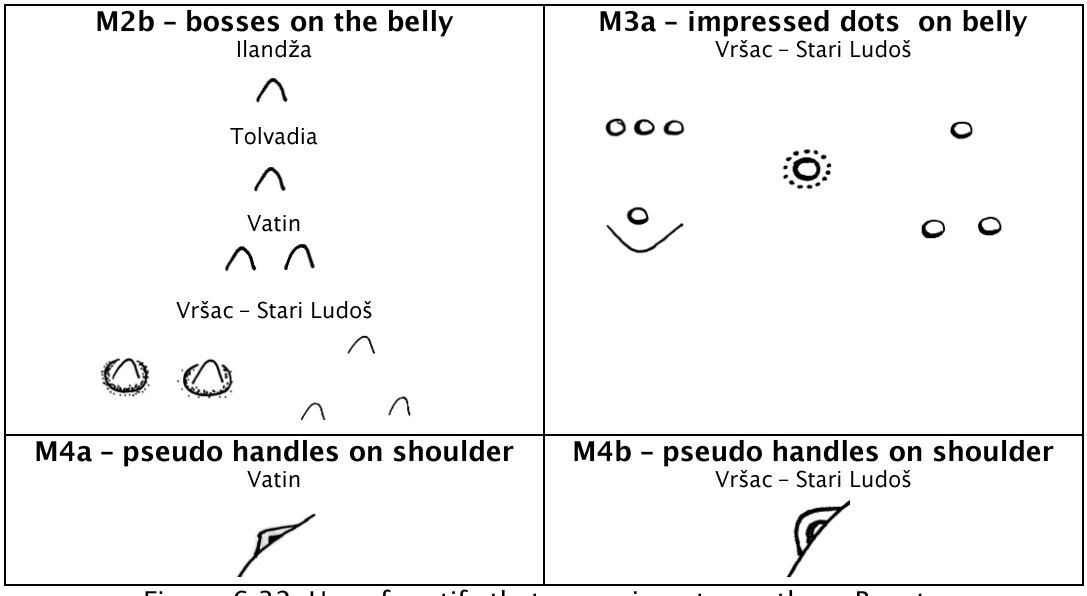


Figure 6.32. Use of motifs that are unique to southern Banat

Belegiš urns from Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš often display the use of bosses as belly decoration (Figures 6.33 and 6.34). This mostly takes the form of one boss placed on the most protruding part of the belly directly in between

the four handles. A number of vessels display this decorative option, which was either used on its own or as a decorative accompaniment to another motif.



Figure 6.33. Boss on belly. Vessel 11830, Tolvadia



Figure 6.34. Boss on belly. Vessel 9887, Vatin

Four vessels in total from the sites of Vatin and Vršac – Stari Ludoš display the application of multiple bosses on the belly located directly above the handles in a triangle formation (Figures 6.35 and 6.36). These were created by moulding a pointed shape of clay and applying it to the vessels surface. Again, this is decoration that is unique to these two sites suggesting that makers had similar methods of practice or it is possible that one single maker made these urns.



Figure 6.35. Bosses on belly. Vessel 9970, Vatin



Figure 6.36. Bosses on belly. Vessel 10545, Vršac – Stari Ludoš

Three vessels from these two sites also have belly decoration that comprises impressed dots, motif M3b, again placed in a triangular structure. These dots were made by a rounded tool, with a diameter of approximately one centimetre. The use

of bosses and impressed dots in this manner is unique to vessels from these two sites, and therefore do not appear on vessels from Tolvadia or Ilandža. It can therefore be once again suggested that the sites of Vatin and Vršac – Stari Ludoš may indicate a subset group of makers that had similar manufacturing practice.

Although makers within the southern Banat group were placing decoration in typical Belegiš layouts on the shoulder, at the sites of Vatin and Vršac – Stari Ludoš there is an addition to the typical repertoire of shoulder decoration options in the form of pseudo-handles (Figures 6.37 and 6.38.). They take angular forms and were placed in between the larger belly handles. They have been labelled as pseudo handles because it is unlikely that they were intended for functional use, but were instead added as decoration. Pseudo handles do not appear on vessels from the sites of Tolvadia and Ilandža. This may be attributed to the latter sites' relatively small sample sizes. However, once again, it may also suggest that within the southern Banat group, the sites of Vatin and Vršac – Stari Ludoš formed a smaller sub community with distinct manufacturing practices.



Figure 6.37. Pseudo handle from vessel 9958, Vatin



Figure 6.38. Pseudo handle from vessel 10520, Vršac Stari Ludoš.

Frequency of Motifs (Figure 6.39)

Within section 6.1, Figures 6.6 and 6.7 showed that the sites of Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš are bound together by the high frequency of motif M5a, typically placed in zone 3B on the belly located in between the handles. Despite the fact that this motif is used on vessels from all nine sites included within this study, the data shows that sites within the southern Banat group display a preference for it, indicated by high frequencies across these four sites. Other motifs, such as M6a, appear on vessels within the southern Banat group. Although a high frequency of these motifs appear on vessels within the eastern Srem group,

they are not as prominently used by southern Banat makers. All motifs were articulated with a variety of different techniques.

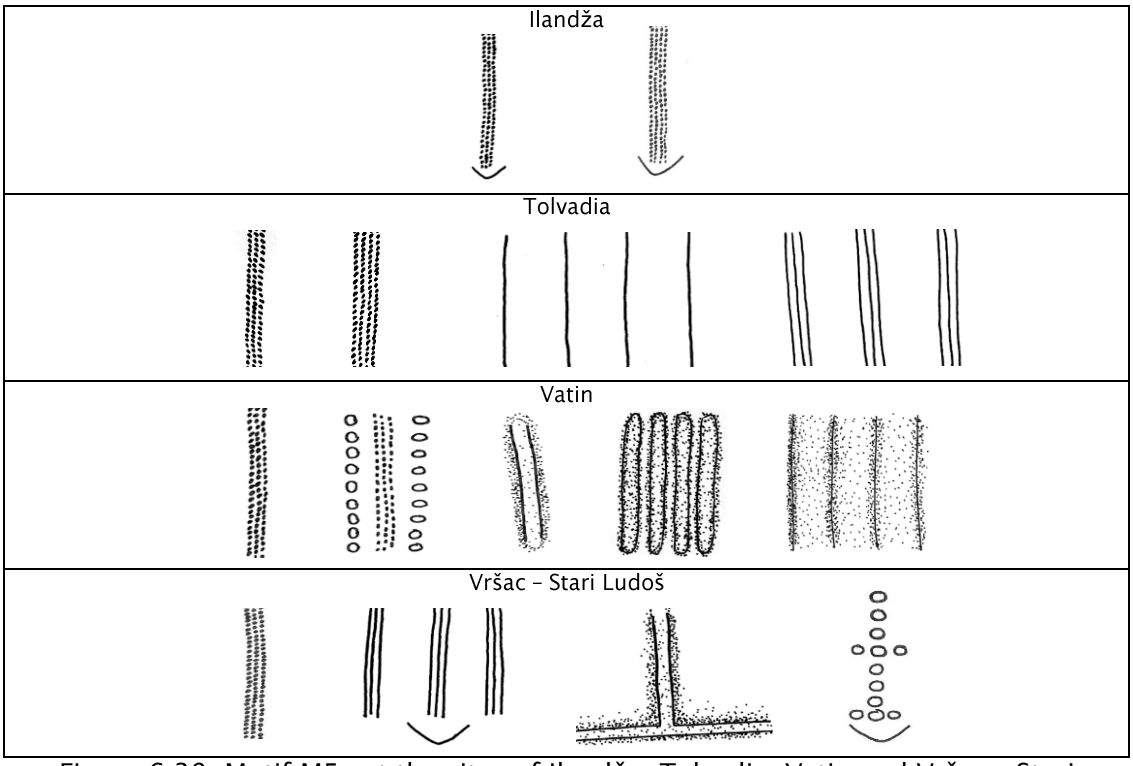


Figure 6.39. Motif M5a at the sites of Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš

Application of Decorative Method (Technique) (Figures 6.40 to 6.51)

In Chapter 5 it was shown that there was a small repertoire of decorative methods such as cord impressing, incising, faceting, fluting, impressing and applied decoration. Figures 6.25 to 6.35 show that these were used by makers within the southern Banat group. However, there was variation in the application of these methods as revealed within the figures. These techniques are discussed below.

The data presented in section 6.1 shows that vessels display the use of cord impressing and incising methods of decoration. The southern Banat group of makers show a distinct preference for impressing three and four strands of cord, as shown in Figure 6.8. Figure 6.40 shows an example of vessel 11830 from Tolvadia with M6a motif created from triple strand impressions (Figure 6.40). Although quadruple strands of cord impressions appear on vessels from Surčin, they feature at each of the sites of Ilandža, Toldavia, Vatin and Vršac – Stari Ludoš indicating it was a consistently used method of decorative practice across the southern Banat group. Figure 6.41 shows an example of M6b motif on vessel 19846 from Vatin that comprises quadruple cord impressions.



Figure 6.40. M6a motif, vessel 11830, Tolvadia



Figure 6.41. M6b motif, vessel 19846, Vatin

The data presented in section 6.1 also highlights that vessels from Tolvadia, Vatin and Vršac – Stari Ludoš show a preference for triple incised combing, as indicated by the high frequency for each site. Figure 6.42 shows an example of vessel 10477 from Vršac – Stari Ludoš that displays triple incised decoration.



Figure 6.42. Triple incised decoration vessel 10477, Vršac – Stari Ludoš

In section 6.1, the sites of Tolvadia, Vatin and Vršac – Stari Ludos were shown to have applied decoration that was simply applied (Figure 6.43), applied and impressed (Figure 6.44) and applied and incised (Figure 6.45). In contrast other sites such as Karaburma did not demonstrate such a range of variation. Therefore makers within the southern Banat group were drawing upon the repertoire of decorative techniques in a different way to makers at other sites.



Figure 6.43. Boss from vessel 11830, Tolvadia



Figure 6.44. Boss from vessel 10019, Vatin



Figure 6.45. Boss from vessel 9937, Vatin

Unique to the sites of Tolvadia and Vršac – Stari Ludoš is horizontal cord decoration on the neck interspersed with small applied bosses. Examples of this type of decorative practice appears within the Vršac – Stari Ludoš assemblage, on vessel 9950 (Figure 6.46), and on vessel 22501 from Tolvadia. Although applied bosses are a staple feature of the overall Belegiš decorative repertoire, their placement on vessel necks is unique to these sites. This demonstrates subtlety in decorative difference between groups of makers; the uniqueness is not in the type of decoration, but in the spatial layout and therefore the specific application of the motif.

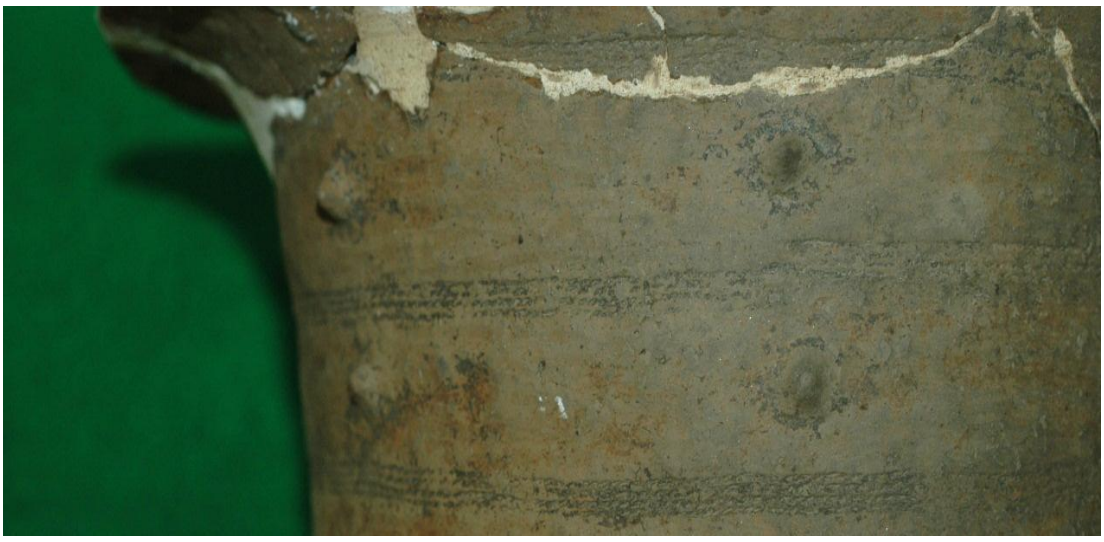


Figure 6.46. Vessel 9950 from Vršac – Stari Ludoš with applied bosses placed on the neck.

One vessel from Vatin and one from Vršac – Stari Ludoš also exhibit the addition of a cordon around the widest part of the belly (Figure 6.47). This addition is only exhibited on vessels from these sites, once again highlighting a community specific decorative addition.



Figure 6.47. Vessel 10883 from Vršac – Stari Ludoš displaying an applied cordon around the belly.

Five vessels from Vatin and 4 vessels from Vršac – Stari Ludoš have facetted bands of decoration on the neck, created with a tool with a wide point (Figure 6.48). Although faceting is a decorative technique that is shared across the sites included within this study, makers at these two sites left approximately a centimetre of space between each groove. This gives a qualitatively different finish. This local technique once again suggests that the sites of Vatin and Vršac – Stari Ludoš may represent a smaller subset of makers. However, the parameters of technical preference are not necessarily distinct; the assemblage from Surčin includes a vessel displaying facetted decoration articulated in this manner.



Figure 6.48. Faceting with wide gap on vessel 9985 from Vatin.

Only vessels from Vatin and Vršac – Stari Ludoš displayed the use of fluting, the majority of which was thick fluting indicating a preference for a specific technique across these two sites. Again this shows similarity across these two sites. Figure 6.49 demonstrates thick fluting on vessel 7963 from Vršac – Stari Ludoš.



Figure 6.49. Vessel 7963 from Vršac – Stari Ludoš demonstrating fluting.

The data presented in section 6.1 highlights that the southern Banat group used specific decorative methods not always seen at other sites. The techniques exclusive to the southern Banat group, including faceting with a gap, applied cordons and applied bosses to the neck, are summarised in Figure 6.50.

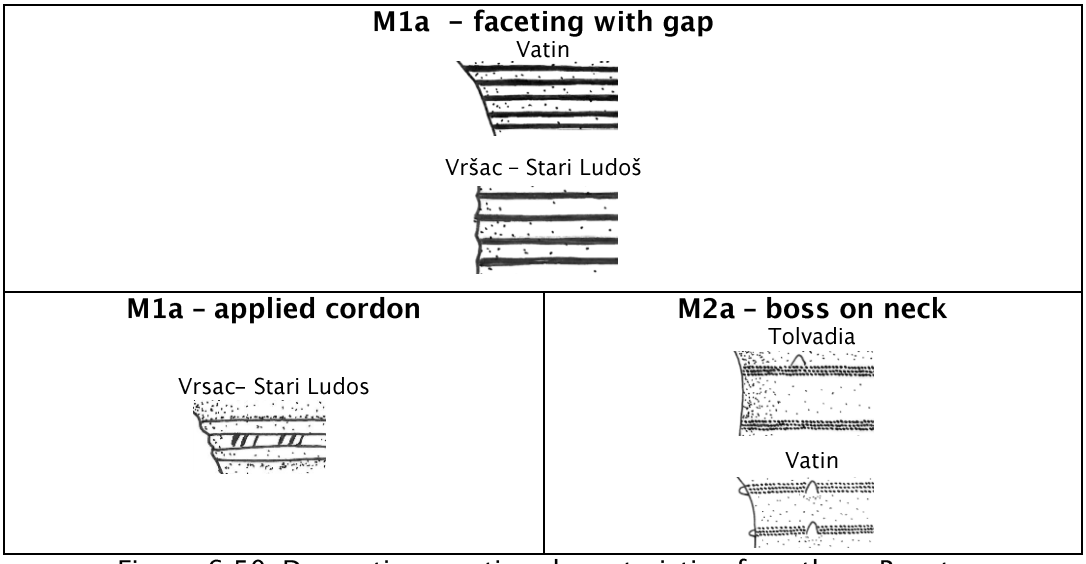


Figure 6.50. Decorative practice characteristic of southern Banat

Despite the variability in decoration, it has been demonstrated that the sites of Ilandža, Tolvadia, Vatin and Vršac – Stari Ludoš have similar methods of decorative practice. This group of sites can therefore be conceptualised as a community of practice. It has been suggested the sites of Vatin and Vršac – Stari Ludoš represent a

sub-group of makers within the southern Banat community. This is based on motifs and decorative techniques that only appear on vessels from these sites.

Community of Practice Three: Southern Bačka

The data presented in section 6.1 highlights that there was a noticeable absence of motif particular motifs at the site of Stubarlija in comparison to other sites. These motifs are given and discussed below. It is for this reason that the site of Stubarlija stands out from the other sites presented within this research and it is suggested that this site may represent another community of practice, termed as southern Bačka throughout the discussion. In addition, two vessels found at Stubarlija were decorated with inlay, a technique that does not appear on Belegiš urns from eastern Srem and southern Banat sites. These differences are discussed below.

Presence and Absence of Motifs

Figures 6.1 to 6.7 show that the site of Stubarlija shared its motifs with other sites and has no unique motifs of its own. Therefore this community cannot be distinguished based on presence of motifs. Noticeably, however, these vessels do not display M6a or M6b motifs, which are prevalent within the eastern Srem group and appears on a small number of vessels within the southern Banat group. Similarly, there are no vessels in Stubarlija that display M3a or M3b impressed motifs that are found on vessels from other sites. It is suggested therefore that the southern Bačka community may be identified by an *absence* of specific motif types.

Frequency of Motifs

Figures 6.1 to 6.7 also show that in a similar fashion to both the eastern Srem and the southern Banat, there is a preference for M1a, M2c and M5a motifs. Therefore identification of the southern Bačka community does not rest on the frequencies of motifs. However Figure 6.6 shows that vessels at Stubarlija do not display decoration above the handles in zone 3A. This indicates that makers at this site used zones differently in comparison to makers operating at other sites; vessels within the eastern Srem and southern Banat groups do display decoration in this zone.

Application of Decorative Methods (Technique) (Figures 6.52 to 6.57b)

Echoing decorative techniques demonstrated in in both eastern Srem and southern Banat, there is evidence at Stubarlija for triple incised combing (Figure 6.51), triple impressed cord (Figure 6.52), applied bosses (Figure 6.53), faceting and thick fluting (Figure 6.54). Due to the small sample size for each decorative method, it is not possible to comment on the frequency of techniques.



Figure 6.51. Vessel from grave 2 with impressed cord



Figure 6.52. Vessel from grave 6 with incised combing



Figure 6.53. Vessel from grave 14 with applied boss



Figure 6.54. Vessel from grave 36 with fluting

Vessel from grave 17 displays inlaid decoration (Figure 6.55). Both the horizontal bands and the stamps of concentric circles were created through use of inlay, a technique that appears to be unique to this Belegiš site. This involved creating incisions into the leather hard clay and in filling it with a white substance in order to create a contrast of colour between the vessel and the decoration.



Figure 6.55. Vessel from grave 17 displaying inlaid decoration.

Grave 33 contained a vessel that has traditionally been interpreted as a southern import from the neighbouring Dubovac – Žuto Brdo group (Figures 6.56a and 6.56b). This interpretation is rooted in the differences between the vessels, namely the shape and decorative techniques used. The most defining decorative technique of this vessel is inlay; infilling of a cavity with a substance of contrasting colour. Yet the placement of decoration and the use of arches and horizontal bands of decoration conform to the Belegiš blueprint outlined in Chapter 5. For this reason, such a traditional interpretation of the material may have overlooked the underlying similarities between seemingly different classifications of object. The process of inlaying is a noted feature of Bronze Age decorative practice, particularly in areas that are further north, along the Danube (Bóna 1975). As was explained in Chapter 3, the site of Dubovac displays vessels with inlay. This site is on the periphery of Belegiš distribution, classed as part of the Dubovac Žuto Brdo complex. However, it is not a technique that is typically synonymous with the Belegiš phenomenon. Stubarlija therefore presents itself as a Belegiš anomaly and can perhaps be thought of as a merging of usually separate technological practices. This is discussed in greater detail in Chapter 7.

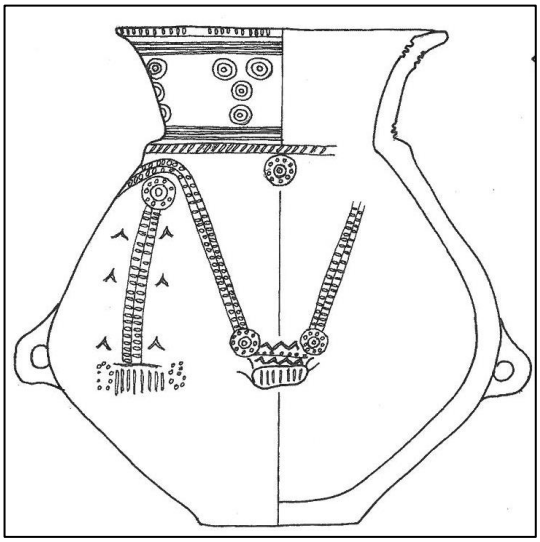




Figure 6.56.a and 6.56b. Grave 33 from Stubarlija, a possible import.

Communities of Practice: A Summary

Above it was suggested that the nine sites included within this study can be grouped into three possible communities of practice. Whereas eastern Srem and southern Banat groups each show the presence of unique sets of motifs, southern Bačka stands out for its noticeable absence of some of these motifs and specific use of particular decorative methods of practice.

Table 6.11 displays a summary of the motifs used by makers within the three communities of practice. This allows for a visual representation of the differences between sites.

			Communities and Sites								
			E. Srem				S. Banat				S. Bačka
			Belegiš – Stojića Gumno	Kaluđerske Livade	Karaburma	Surčin	Ilandža	Tolvadia	Vatin	Vršac – Stari Ludoš	Stubarlija
Motifs	Neck	M1a	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
		M1b	*x*	*x*	*x*	*x*					
		M1c				*x*			*x*	*x*	
		M2a						*x*		*x*	
		M3b									*x*
	Shoulder	M1a			*x*	*x*				*x*	*x*
		M1b	*x*	*x*	*x*	*x*		*x*		*x*	
		M2a	**X**	*x*		*x*		*x*	*x*	**X**	**X**
		M2b		**X**	**X**		**X**	*x*			
		M2c	*x*	*x*	*x*	**X**		*x*	**X**	X	**X**
		M3a			*x*			*x*			
		M3b	*x*		*x*		*x*		*x*		
		M4a							*x*	*x*	
		M4b							*x*		
	Belly	M1a								*x*	
		M1b	*x*		*x*	*x*					
		M2b							*x*	*x*	
		M3a								*x*	
		M3b	*x*		*x*						*x*
		M5a	**X**	*x*	*x*	**X**	**X**	**X**	**X**	**X**	*x*
		M5b	*x*	*x*	*x*	*x*		*x*	*x*	*x*	*x*
		M5c		*x*							
		M6a	**X**	**X**	*x*	**X**		*x*	*x*		
		M6b	*x*			*x*	*x*	*x*	*x*		
		M7a	*x*		*x*	*x*					
		M8a	*x*	*x*	*x*	*x*				*x*	
		M8b	*x*	*x*	*x*						
		M9a	*x*	*x*	**X**	*x*					*x*
		M9b	*x*		*x*	*x*	*x*			*x*	*x*
		M9c	*x*	*x*		*x*		*x*	*x*		
		M9d	*x*			*x*					
		M9e	*x*		*x*	*x*					

Table 6.11. Distribution of Motif Types across Communities of Practice.

A site is marked with a cross when a motif or technique is present within the assemblage. Bold crosses are used to indicate a comparatively high frequency (above 50%), as shown in the graphs in section 6.1. Crosses marked in red indicate motifs and techniques that are unique to the eastern Srem community of practice. Blue crosses mark motifs and techniques that only occur within the southern Banat community. Finally, crosses marked in green are techniques that are unique to the southern Bačka community of practice.

Table 6.12 illustrates the decorative techniques used, again enabling observation of inter-site contrast.

		Communities and Sites								
		E. Srem				S. Banat				S. Bačka
		Belegiš – Stojića Gumno	Kaluđerske Livade	Karaburma	Surčin	Ilandža	Tolvadia	Vatin	Vršac – Stari Ludoš	Stubarlija
Techniques	Single Cord		x							
	Double Cord	**x**	x	**x**	*x*					
	Triple Cord	**x**	**x**	*x*	**x**	**x**	**x**	**x**	*x*	*x*
	Quad. Cord				*x*	*x*	*x*	*x*	*x*	
	Pseudo Cord				*x*	*x*				
	Single Incised	*x*		*x*	*x*		*x*			
	Double Incised	*x*	*x*	*x*	*x*					
	Triple Incised	**x**	*x*	**x**	*x*		*x*	*x*	*x*	*x*
	Small Impression			*x*	*x*		*x*	*x*	*x*	
	Med. Impression			*x*	*x*		*x*		*x*	
	Large Impression					*x*		*x*	*x*	
	Inlaid/Impressed									*x*
	Inlaid/Incised									*x*
	Applied boss	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	*x*
	Boss w/ impress.		*x*		*x*		*x*	x	*x*	
	Boss w/ incise.						*x*	x	*x*	
	Facetted	*x*		*x*	*x*					
	Facetted w/ gap		*x*		*x*			**x**	**x**	*x*
	Thin Fluting	*x*	*x*	*x*	*x*			x		
	Thick Fluting	**x**	*x*	*x*	**x**			x	*x*	**x**

Table 6.12. Distribution of Decorative Techniques across Communities of Practice.

Once again a cross indicates the presence of a technique at a site. When in bold, the cross indicates a comparatively high frequency in use of technique (above 50%).

These tables highlight that although communities of makers can be identified within the data and that there was variability within these groups of makers, there is overlap between all sites that can be attributed to the fact that each vessel was made within the wider Belegiš tradition (see Chapter 5). It has been shown however that Belegiš vessels made within a community of practice often display characteristics unique to that community.

6.2.2 Technical Gesture: Exploring the Role of the Individual

It has been argued that a vessel is 'made by an individual actor but within a social arena and historical tradition' (Kohring 2011:14). Whereas Chapter 5 was concerned with the overall Belegiš tradition, demonstrating overarching similarities between vessels, and section 6.2.1 presented and discussed suggested communities of practice based on similarities and differences between groups of sites, the section below centres on the role of the individual. It was put forward in Chapter 2 that the

concept of gesture presents a gateway for elucidating the technical actions of individual makers and therefore another lens from which similarity and difference between vessels can be explored.

It is acknowledged within this thesis that the making of a vessel embodies a series of technical gestures throughout each stage of manufacture. However the dataset offers the most insight into the technical execution of decoration. In Chapter 4 it was explained that vessels display differences in how decorative techniques were administered. For cord impressions and incised decoration, the categories of *neat* and *rough* emerged. For *cord impressions, incisions*, *impressions*, *faceting* and *fluting*, the categories of light and deep made became apparent. It is argued that each category represents a slight difference in technical gesture. Technological traces also demonstrate differences in the tools used, which may also communicate the choice of the individual. Examples are given throughout this discussion.

Neat and Rough

The data presented in Figure 6.15 in section 6.1 demonstrated that the sites of Surčin, Tolvadia and Vatin show variation in the execution of cord impressions. Although for each of these sites there was a high frequency of neat impressions, for example vessel 11820 from Tolvadia (Figure 6.57), the inclusion of rough cord impressions, such as vessel 9987 from Vatin (Figure 6.58), communicates differences in technical gesture within each of these sites. At Ilandža, Stubarlija and Vršac – Stari Ludoš, all vessels with incised decoration displayed neat execution.



Figure 6.57. Neat cord impressions on vessel 11820 from Tolvadia.



Figure 6.58. Rough cord impressions on vessel 9987 from Vatin

Figure 6.17 in section 6.1 highlighted that only Surčin had vessels with both neat, such as vessel 20700 (Figure 6.59), and rough incised decoration, such as vessel 20750 (Figure 6.60). The sites of Stubarlija, Tolvadia, Vatin and Vršac – Stari Ludoš only show neatly executed inside decoration. This indicates that makers at these sites were executing incised decoration in similar ways.



Figure 6.59. Vessel 20700 from Surčin displaying neat incised combing.



Figure 6.60. Vessel 20750 from Surčin displaying rough incised combing.

It is suggested that the differences between the neat and rough executions of these decorative methods highlight variability in the ways individuals were enacting within their group of practice. It is likely that neat executions communicate practice that was well established and smooth through repetition and therefore technical gestures that become routine, resulting in habitual technical behaviour or *habitus* (Mauss 1934). It has been argued that gestures become habitual through learning (Budden 2007). In the case of Belegiš urns, makers executing both neat and rough decoration clearly understood the technical task at hand, but the difference between the two types of gesture occurs in their ability to do so effectively. The rough decoration in contrast to the neat decoration may therefore indicate execution of decoration by an unsteady hand. This suggests that habitus had not yet been established. Therefore within each community of practice, the variation in neat and rough categories at the aforementioned sites suggests that makers 'learnt on the job.'

Light and Deep

In section 6.1 it was highlighted that there was variation in the execution of cord impressions; the data shows that across sites cord was either lightly or deeply impressed. The difference between these two categories can be attributed to the gestures used during execution; light impressions would have been created by applying less pressure when impressing and deep impressions would have required a heavier hand. Overall, the data shows a higher frequency of light cord impressions across sites such as that of vessel 9950 at Vatin (Figure 6.61), although not in the case of Surčin, where a higher proportion of vessels display deep cord impressions, such vessel A318 from Ilandža (Figure 6.62). Despite this, all sites show variation in whether cord was impressed with a light hand or with more pressure to create a deeper impression.



Figure 6.61. Light Cord Impressions on vessel 9950 at Vatin



Figure 6.62. Deep Cord Impressions on vessel A318 at Ilandža.

The data also shows that there was variation in incised decoration. This is most noticeable at the site of Surčin, where there is a larger sample size of vessels with incised decoration. At this site there is an almost even proportion of light incised decoration to deep incised decoration indicating that there was variation in gestures between makers at the site. The figures below show an example of light incised decoration on vessel 20712 from Surčin (Figure 6.63) and an example of deep incised decoration on vessel 20727 from Surčin (Figure 6.64).



Figure 6.63. Vessel 20712 from Surčin displaying light incisions



Figure 6.64. Vessel 20727 from Surčin with deep incisions

The sites of Surčin, Vatin and Vršac – Stari Ludoš display variation in the depth of impressions. Figure 6.65 gives an example of light impressions executed on vessel 10387 at Vršac – Stari Ludoš. Figure 6.66 demonstrates deep impressions also on vessel 10387 at Vršac – Stari Ludoš. This could be an example of a vessel being decorated by two different people, or that one maker was consciously modifying their gesture to create a different decorative effect; the size of the impressions is 5mm and therefore it is possible that both the light and deep impressions were made by the same tool.



Figure 6.65. Light impressions on vessel 10387 at Vršac – Stari Ludoš.



Figure 6.66. Deep impressions on vessel 10387 at Vršac – Stari Ludoš.

The data shows that at the sites of Stubarlija, Vatin and Vršac – Stari Ludoš, vessels only display deep faceting, such as vessel 10083 at Vatin (Figure 6.67) indicative of the use of a certain type of gesture that involved using pressure with the tool. In contrast, the site of Surčin has both light facets, as shown on vessel 20963 from Surčin, and deep faceting which communicates variation in the amount of pressure used whilst creating the facets. This suggests that at Surčin, individual makers executed facets in a variety of ways.



Figure 6.67. Deep faceting vessel 10083 at Vatin.

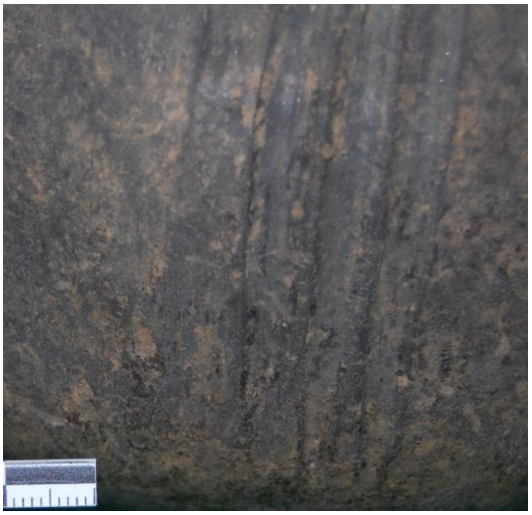


Figure 6.68. Light faceting vessel 20963 from Surčin.

It is also evident that different tools were used during the faceting process; the wide incised decoration on vessel 10083 from Vatin (figure 6.69) was created with a straight edged tool and the bands on vessel 9897 from Vatin (figure 6.70) are more curvilinear, suggestive of the use of a rounded tool. In light of this is can be

suggested that individual responses to technical repertoires contribute to the generation of variation.

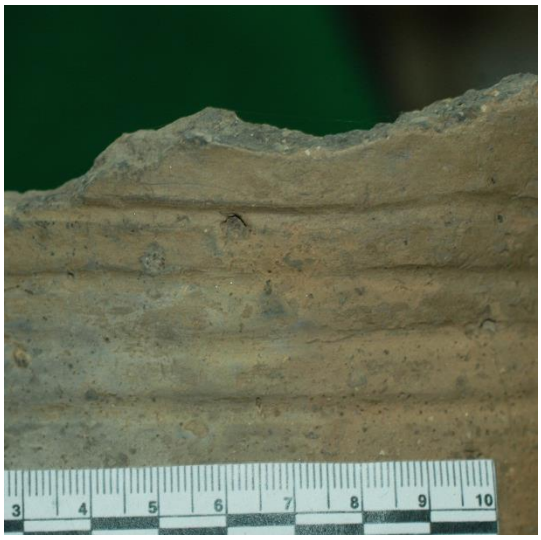


Figure 6.69. Vessel 10083 from Vatin with faceting made with a straight edged tool



Figure 6.70. Vessel 9897 from Vatin with faceting made with a curved tool

The data also displays differences in the execution of fluting. The site of Vatin displays vessels with light fluting, as demonstrated by vessel 9937 (Figure 6.71). The site of Vršac – Stari Ludoš has vessels with deep fluting, as shown by vessel 7963 (Figure 6.72). The sites of Stubarlija and Surčin however have vessels with both light and deep fluting, indicating variation in execution of decorative methods within these sites.



Figure 6.71. Vessel 9937 at Vatin showing light fluting.



Figure 6.72. Vessel 7963 at Vršac – Stari Ludoš showing deep fluting.

Within each a category such as *light facet* there are fractional differences. For example, light faceting that tails off at the bottom (as shown in Figure 6.69) suggests a 'flicking' action was employed. In contrast, vessel 20699 from Surčin (Figure 6.73) shows technological traces that suggest a steadier gesture from top to bottom when creating the facets. The difference between the two is challenging to sufficiently quantify; to the eye these two examples of decoration are different from each other and yet it is not easy to explain how they are different. Despite this, even minute differences between examples of *light facetted* decoration suggest that there was variation in the technical gestures of individual makers.



Figure 6.73. Vessel 20699 from Surčin displaying light facets

Technical Gesture: A Summary

Table 6.13 summarises the data relating to individual gesture and displays it in a format that allows for a comparison to be created between technical execution and the proposed communities of practice.

		Communities and Sites								
		E. Srem				S. Banat				S. Bačka
		Belegiš – Stojića Gumno	Kaluđerske Livade	Karaburma	Surčin	Ilandža	Tolvadia	Vatin	Vršac – Stari Ludoš	Stubarlija
Execution of Techniques	Neat Cord	N/A	N/A	N/A	**X**	**X**	**X**	**X**	**X**	*x*
	Rough Cord	N/A	N/A	N/A	*x*		*x*	*x*		
	Light Cord	N/A	N/A	N/A	*x*	*x*	**X**	*x*	*x*	*x*
	Deep Cord	N/A	N/A	N/A	*x*	**X**	*x*	*x*	*x*	
	Neat Incised	N/A	N/A	N/A	*x*		*x*	*x*	*x*	*x*
	Rough Incised	N/A	N/A	N/A	**X**					
	Light Incised	N/A	N/A	N/A	*x*		*x*	*x*	*x*	
	Deep Incised	N/A	N/A	N/A	*x*		*x*			*x*
	Light Impressed	N/A	N/A	N/A	*x*			*x*	**X**	
	Deep Impressed	N/A	N/A	N/A	*x*		*x*	*x*	*x*	
	Light Facet	N/A	N/A	N/A	*x*					
	Deep Facet	N/A	N/A	N/A	*x*				*x*	*x*
	Light Fluting	N/A	N/A	N/A	**X**			*x*	*x*	**X**
	Deep Fluting	N/A	N/A	N/A	*x*			**X**		*x*

Table 6.13. Distribution of Execution of Decorative techniques across Communities of Practice

As with the previous tables, a cross represents the presence of a category of decorative execution and bold crosses indicate high frequency of execution.

Table 6.13 highlights that the communities of practice identified in section 6.2.2 do not necessarily correspond with differences in variation in technical gesture. Instead, it is apparent that some individual sites, most noticeably Surčin, display more variation in gesture than others. Individuals were therefore engaging with Belegiš manufacture in slightly different ways at different sites, contributing to the variation that is present within the dataset. This is reflected upon below.

6.2.3 Thinking through Belegiš Practice

The data presented and discussed throughout this chapter elucidates both community practice and individual practice. Three communities of practice were suggested; eastern Srem, southern Banat and southern Bačka. These groupings emerged from differences in manufacturing practice across the Belegiš region. Both the eastern Srem and southern Banat communities were identified according to the presence of community specific motifs. Stubarlija which was assigned to its own south Bačka community has been classified according to the absence of particular motifs. Consequently, the defining features of each community of practice

identified within this research vary. The data also demonstrated that across sites and communities of practice there was variation in the execution of decorative methods, in terms of neat, rough, light and deep. It is argued that these categories indicate differences in technical gesture that relate specifically to the motor habits of individual makers working with a community.

The differences between neat and rough executions of decorative methods can be attributed to mechanisms of learning. Learning how to make and decorate a vessel is 'a socially situated phenomenon' (Budden 2007:60); the individual creating the decoration may have learnt to do so from a more accomplished maker within his/her community of practice. Therefore at the heart of a communal practice is a sharing of procedural knowledge. This is embodied non-discursive knowledge that goes beyond factual discursive understanding of *what* needs to be done. Instead this knowledge is transformed into an understanding of *how* to do it (Andersen 1982). The transfer of discursive knowhow to non-discursive knowledge is achieved through repetition and is therefore intertwined with the formation of motor habits (Mauss 1935). The acquisition of technological procedural knowledge has been argued to be shaped by the learning environment (Rogoff 1990) and is consequently community dependent. Differences in technical gesture may consequently mirror distinctions in the transference of motor habits from one maker to another. Within the dataset, rough decoration may signal a maker that was in the process of learning and therefore transforming discursive knowledge into non-discursive knowledge. On the other hand, neat decoration may indicate a maker that had formed a strong set of motor habits through repetitive technical action. The variation suggests that those undertaking the decorating of Belegiš urns were at varied stages in their learning process. The opposite has been found at Bronze Age sites elsewhere; at the Middle Bronze Age site of Százhalombatta, roughly 250 kilometres north of the Belegiš phenomenon, makers participated within an apprenticeship system of learning where more complicated vessels were made and decorated by more accomplished makers (Budden 2007).

Categories of light and deep decoration may also inform of technical gestures and the transmission of motor habits through learning. It may be that through learning the craft from a maker who creates deep incisions, the novice's incisions will also be deep. Therefore differences in technical gesture may not just be a sign of differences in repeated action as was discussed above, but also may signal lineages of learning and the transmission of specific technical gestures from one maker to another.

There are examples of variation *within* the categories of light and deep and this was much more difficult to quantify, hence the reason that no quantitative data relating

to this was included within this chapter. It is suggested that this variation can be attributed to the fact that each maker may have honed their craft in different ways. A modern example of this is how people learn to drive. The majority of individuals who learn to drive learn are taught to specific guidelines by their instructor. After passing their test however, an individual's way of driving may modify over time as they become more experienced. It is suggested that a similar thing may have happened for Belegiš makers and that after the initial transmission of technological knowledge from accomplished maker to novice, these newer makers developed their own way of making a vessel as they became more experienced. This can be thought of as self-acquired knowledge that occurs over time (Greenfield et al. 2000). This may explain the slight differences in gesture between makers and is something that is reflected upon in more detail in Chapter 8.

It is clear that both communities of practice and the individuals operating within them were responsible for the similarities and differences within the Belegiš phenomenon. The communities of practice suggested within this chapter maintained their expression of the Belegiš tradition in locally specific ways. It is possible that individuals showed variation at different stages of learning their craft which resulted in variation in decorative outcome. Chapter 7 uses the lens of creativity to look at the role of the individual in creating variation from a different angle.

Chapter 7
Creativity
Data Presentation and Discussion

Perhaps the most challenging aspect of investigating Belegiš urns through the lens of creativity is identifying and presenting the different ways in which creativity manifested. Within Chapter 2, creativity within the archaeological record, and specifically the context of object manufacture, was explained as *the process of engagement between maker and material, and the reassembly of existing socio-cultural manufacturing knowledge that produces an object embodying uniqueness.* This provides a starting point for exploring creativity within Belegiš urns. Within this chapter the themes of *novelty* and *problem solving* that were introduced in Chapter 2 are used as a gateway for examining specific facets of creativity and how they may have been materially expressed within the Belegiš phenomenon. Within this chapter, individual urns are discussed in order to explore these themes.

7.1 Creativity and Novelty

As was presented in Chapter two, recent discussions of creativity have rejected the idea that it is marked by the introduction of something entirely new (Runco and Albert 2010) and instead insist that creativity is an on-going process where novelty is constantly being produced (Hallam and Ingold 2007). In order to reflect on this within the context of the Belegiš phenomenon, in the following section individual vessels are given as examples of the different ways in which novelty appears within the assemblage. These are discussed under the headings of *combination*, *elaboration, mimesis* and *incorporation*.

7.1.1 Creativity as Combination

A widely used definition of creativity within the social sciences is that it is the novel combination of existing practices (Liep 2001:2). Within the assemblage novel combination occurs in the form of the fusion of two existing motif types or the bringing together of motif type and technique. Both one-off examples of this and examples that were repeated throughout the dataset are discussed below.

Combination of Motifs

It is suggested that the concept of hybridisation works well within a discussion of creativity as combination. The word hybrid in biology is often used to describe the offspring of genetically dissimilar parents. In the context of creativity in decoration,

it refers to the bringing together of two usually separate decorative motifs or methods. Several vessels within the dataset display the merging of two or more decorative motifs. Vessel 20725 from Surčin displays horizontal straight bands of decoration with the addition of a zigzag (Figures 7.1a and 7.1b). This one off form of hybridised decoration is unique to entire dataset and is a combination of M1a and M1b motifs (see Figure 4.10 in Chapter 4). This example demonstrates that the maker was familiar with both M1a and M1b motifs and merged these to create a novel formation.





Figures 7.1a and 7.1b. Vessel 20725 from Surčin illustrating a combination of decoration.

Vessel 20687, again from Surčin, displays horizontal facetted bands of neck decoration (M1a) combined with impressed dots (M3b) (Figures 7.2a and 7.b). Impressed dots usually only occur on vessel shoulders as was explained in Chapter 5, although it is usual for horizontal bands to occur on the vessel neck. This vessel therefore shows a deviation from this manufacturing norm and a bringing together of two usually separate motifs. Yet the location of the decoration is also integral to this creative fusion, highlighting that combination and location are entwined.



Figures 7.2a and 7.2b. Vessel 20687 from Surčin displaying combination of decorative techniques.

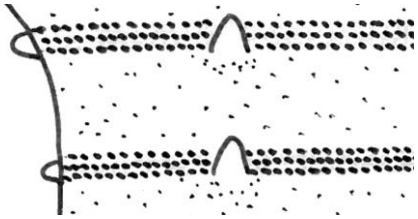
Vessel 1 from grave 17 at Stubarlija displays horizontal bands of decoration combined with circular 'stamps' (Figures 7.3a and 7.3b) These stamps of decoration have been noted on urns from Karaburma but again these were usually placed on the shoulder, as was discussed in Chapter 5. This one off example once again demonstrates a creative combination of neck decoration. The relocation of the stamps to the neck is also an important aspect of the creativity embodied by this vessel.



Figures 7.3a and 7.3b. Vessel 1, from grave 17 in Stubarlija, displaying combination of decoration.

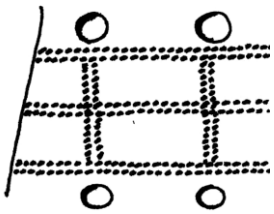
Figure 7.4 shows an illustration of vessel 9950 from Vatin demonstrating a merging of horizontal cord impressed bands (M1a) with small applied bosses (M2a). Small bosses usually only appear as shoulder decoration, as was highlighted in Chapter 5, and so this vessel brings to light an example of a combination of motifs and a relocation of the M2a motif to the neck.

On vessel 8891 at Belegiš – Stojića Gumno, motif combination occurs in the form of horizontal bands (M1a), vertical bands (M5a) and impressed dots (M3b) (figure 7.5). This represents a creative combination of neck decoration; usually impressed dots were placed on the shoulder and vertical bands appear only on the belly (see chapter 5). The location of the decoration is therefore an important element of the creative action signalled by this vessel because it goes against the usual spatial layout of decoration as revealed in Chapter 5.



Vatin: 9950

Figure 7.4. Combination of neck decoration on vessel 9950 from Vatin



Belegiš – Stojića Gumno: 8891

Figure 7.5. Combination of neck decoration on vessel 8891 from Belegiš –Stojića Gumno

The one off examples described above demonstrate that some vessels within the dataset display novelty that was generated by both combining existing motifs and a repositioning of motifs. The significance of this is explored in more depth in the discussion at the end of section 7.1.1.

Combination of Motif and Decorative Method

Several vessels from the dataset displayed novelty in the form of combination of motif and decorative method. Vessel 20687 from Surčin displays horizontal bands of decoration on the neck (M1a) created with impressed dots (Figure 7.6a and 7.6b). The usual decorative methods associated with motif M1a are impressed cord, combing, faceting or fluting (see Chapter 5), while impressed dots of decoration usually only occur on the shoulder of a vessel. This particular vessel however displays a deviation from the normal repertoire and illustrates a creative combination of motif type with decorative method. Once again, this vessel highlights a repositioning of decoration, from the shoulder to the neck.



Figures 7.6a and 7.6b. Vessel 20760 from Surčin with small sized impressed dots

Vessel 11820 from Tolvadia demonstrates the use of applied cordons of clay to create a decorative arch (Figure 7.7). The arch (M9) has been identified as a key Belegiš motif type but this is usually executed with impressed cord or incised combing (see Chapter 5). The application of clay cordons has been noted at the sites of Vatin and Vršac – Stari Ludoš (see Chapter 6). However, the use of this method to create arches is a creative combination of existing technological understanding.



Figure 7.7. Vessel 11820 from Tolvadia with applied cordons as arches.

Another example of a novel combination of motif type and decorative method of articulation is vessel 10387 from Vršac – Stari Ludoš. The maker created a vertical stem motif (M5a) with shallow impressed dots (Figure 7.8a and 7.8b). Belegiš urns often display the use of impressed dots as a decorative method but this is usually on the shoulder (see Chapter 5). This vessel therefore gives another one off

example of an existing motif (M5a) that was articulated in a creative way, but still drew upon understanding of how to administer an existing decorative method.



Figure 7.8a and 7.8b. Vessel 10387 from Vršac – Stari Ludoš with impressed dots

Vessel 9882 from Vatin shows vertical stems of decoration, M5a, which were articulated with impressed cord, a typical decorative method used for this motif type. In addition to this method of decoration, the maker also created a vertical stem of shallow impressed dots either side of the impressed cord stem (Figure 7.9). This demonstrates the novel articulation of a motif type by bringing together two usually separate decorative methods.



Figure 7.9. Vessel 9882 from Vatin with medium sized impressed dots

Within contemporary studies of creativity, novelty has been used as a key signifier of creative action (Erez and Nouri 2010, Runco 2007). Each of the Belegiš examples described above, although novel, challenge the traditional idea that creative novelty

stems 'out of nothing.' All of these vessels demonstrate a bringing together of two usually separate aspects of Belegiš manufacture. The examples presented above show that creativity in combination can be seen in the bringing together of two motifs, the merging of motif with a decorative method and the bringing together of two usually separate decorative methods (Table 7.1). This shows that there are different permutations of creative combination that present themselves within the dataset. It is further suggested in light of this that creativity in the form of novel combination was rooted in the maker's knowledge of their craft and it materialised as the merging of manufacturing knowledge. Consequently one of the hallmarks of creativity within this Belegiš dataset is uniqueness, yet no vessel is truly novel in the sense that it reflects an entirely new method of manufacture. For those making Belegiš urns, creativity in the form of novel combination was a reassembling of existing manufacturing ideals and methods which is most noticeable at the decorative stage. These hybrid forms of decoration often involve the relocation of certain motifs or decorative methods, with decoration that is mostly associated with the vessel shoulder being placed either on the vessel neck or vessel belly. This communicates a deviation from the usual spatial layout of decoration as described in Chapter 5, but also once again demonstrates that makers drew from the overall repertoire of Belegiš motifs and decorative methods to create novel combinations.

Two Motifs	The hybridisation of two usually separate motifs.
Motif and Decorative Method	The hybridisation of motif and decorative method.
Two Decorative Methods	The hybridisation of two usually separate decorative methods.

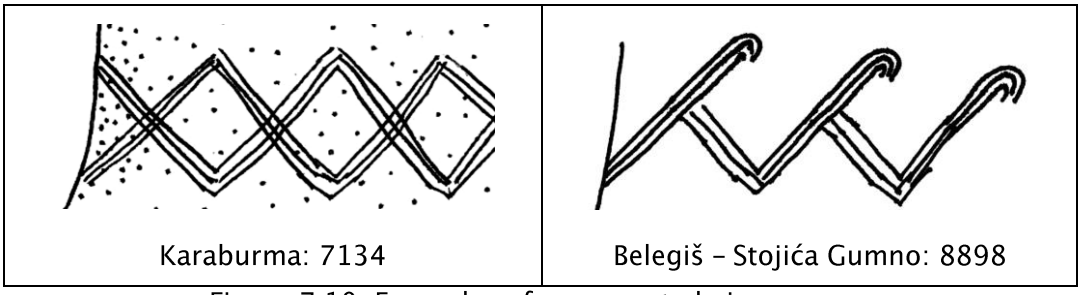
Table 7.1. Different Permutations of Creative Combination

7.1.2 Creativity as Elaboration

Although creative novelty can present itself as combination, contemporary researchers also argue that creativity can occur as elaboration (Erez and Nouri 2010). Elaboration is the process of adding more complex detail to an existing idea. Exploration of the Belegiš dataset shows that creativity appears within the assemblage in this manner and that this is once again most noticeable in the context of decoration. Elaboration does not occur for all motifs. Instead only specific motifs that lend themselves to elaboration display this type of creativity. These motifs are indicated and discussed below.

Elaboration of motifs occurs on selected areas of the vessel. The following examples show elaboration in motifs that occurred on the neck. Vessel 7134 from Karaburma shows elaboration in motif variant M1b, where one zigzag was added to another to create a unique decorative formation (Figure 7.10). Vessel 8898 from Belegiš –

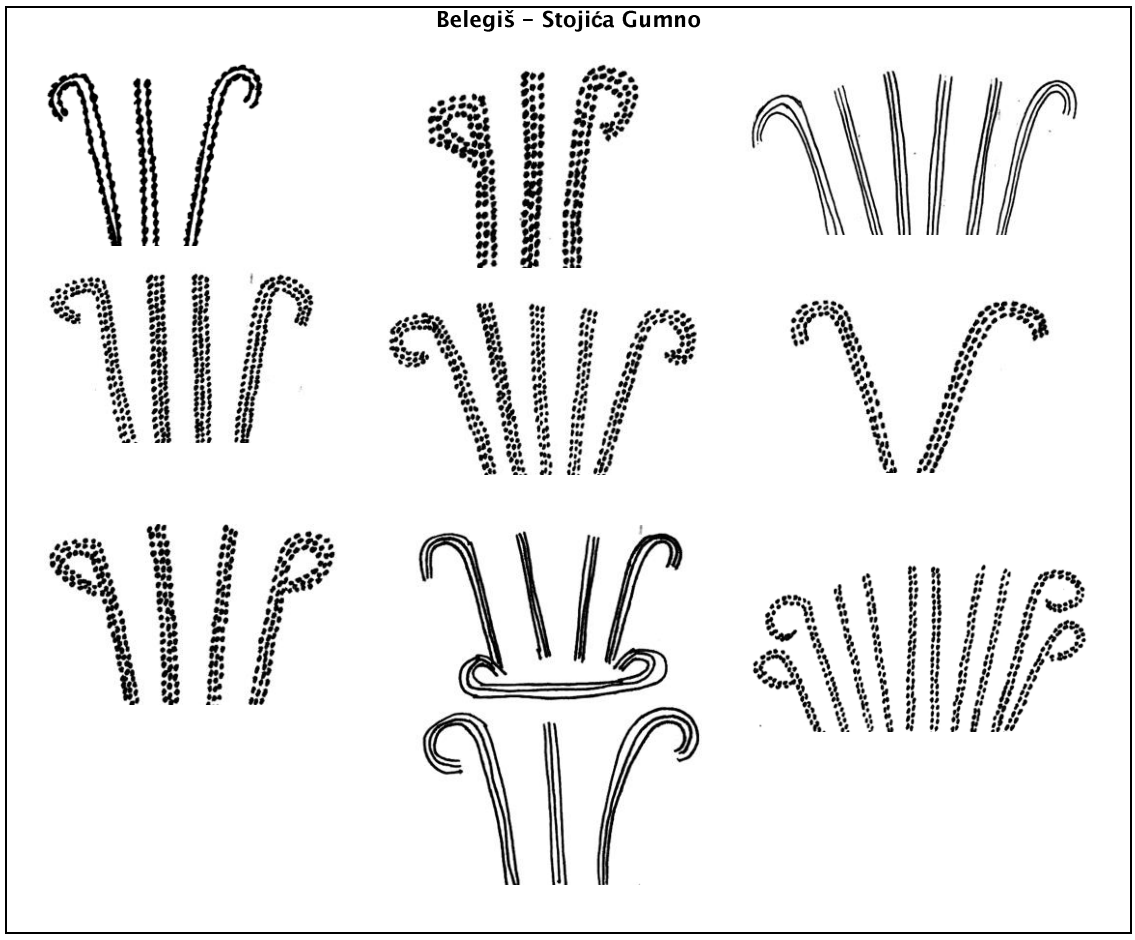
Stojića Gumno exhibits elaboration of the same zigzag motif M1b through the addition of curves (Figure 7.10). This was again a formation that was unique to the dataset.



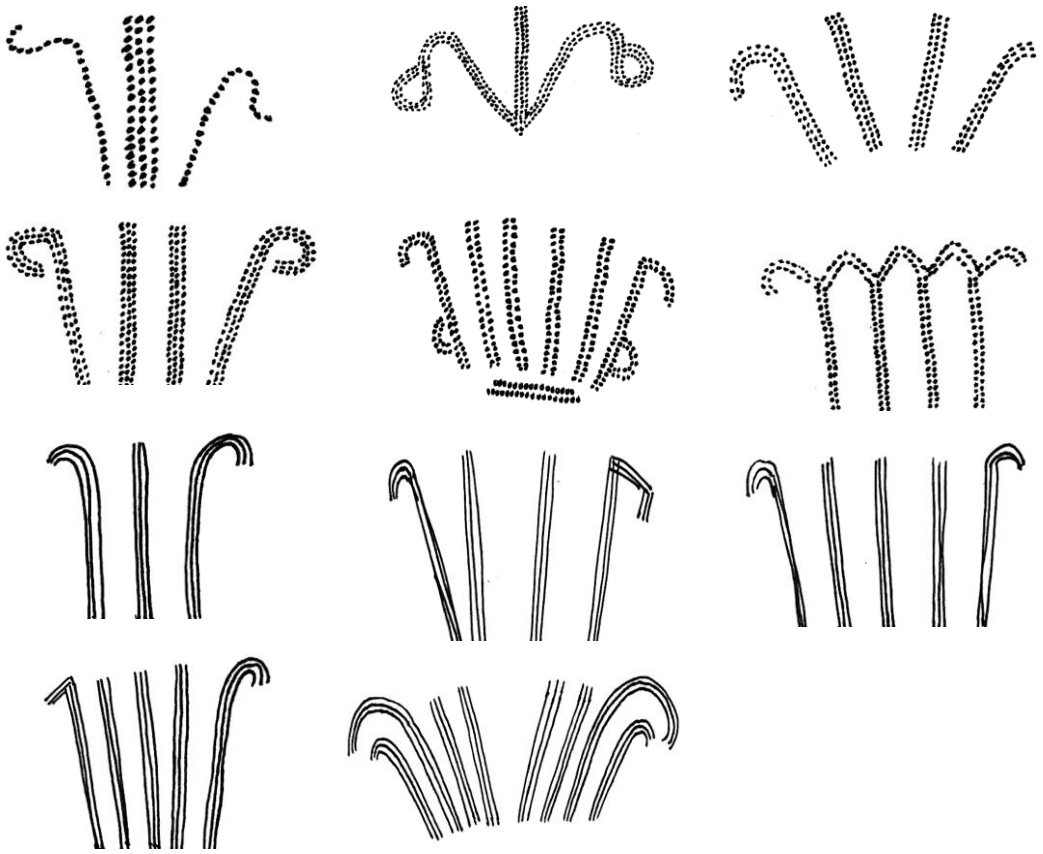
Karaburma: 7134 | Belegiš – Stojića Gumno: 8898

Figure 7.10. Examples of exaggerated zigzags.

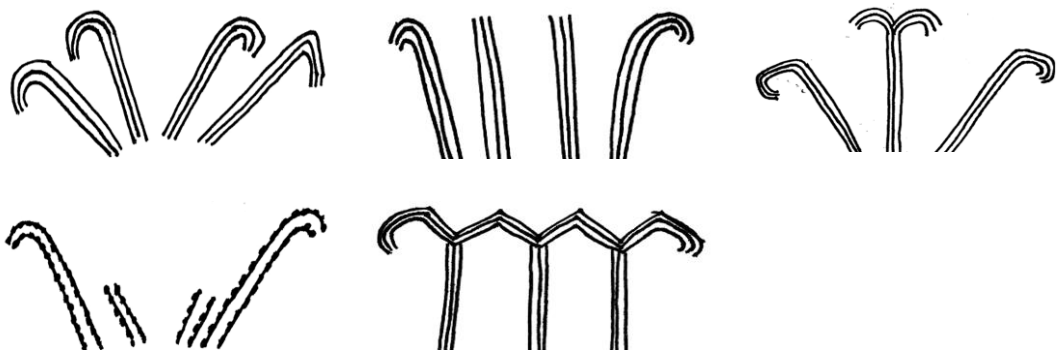
It was shown within the dataset presented in Chapter 6 that particular motifs on the belly, namely M6a, M6b, M7a, and M8a, displayed variation in terms of decorative method and configuration. Figure 7.11 below gives M6a as an example and shows that each articulation of this motif was novel in some way in terms of a varied number of parallel stems and curvature of the looped outer stems. The decorative technique used to articulate this motif also varied, and included double, triple and quadruple combing and double and triple impressed strands of cord (Figure 7.11). Each of these examples of M6a motif highlights a unique configuration of an existing motif type which can be classed as creative with often subtle differences.



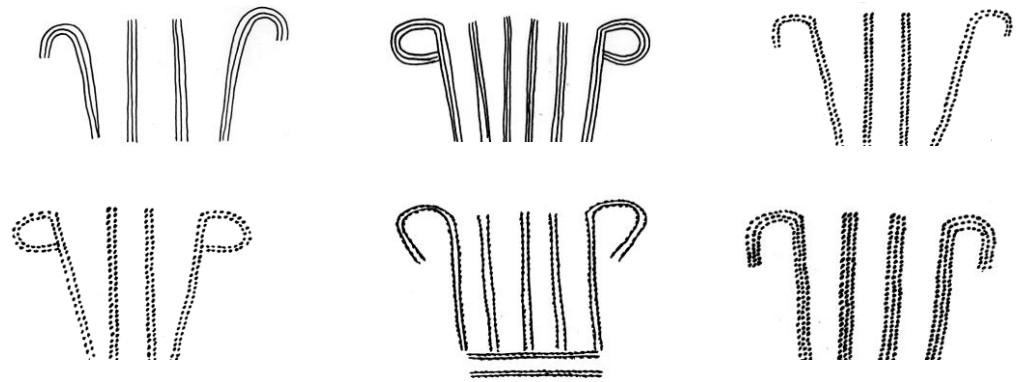
Kaluđerske Livade



Karaburma



Surčin



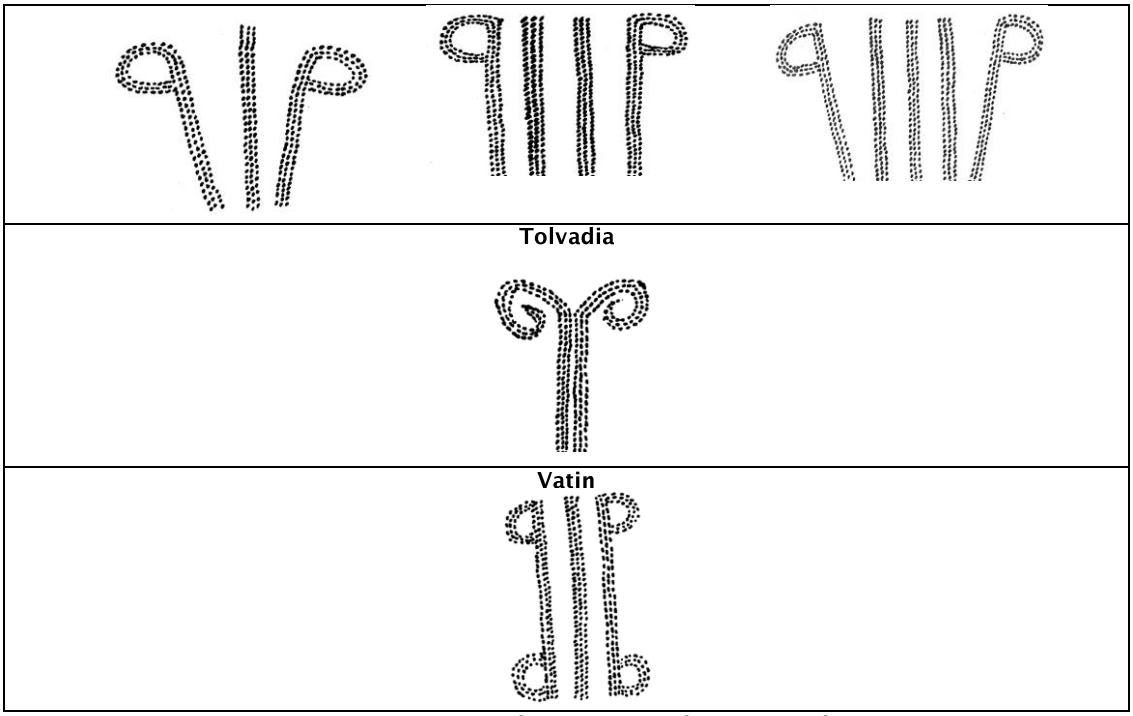


Figure 7.11. Configurations of M6a Motif.

In contrast to these subtle configurations, within the dataset there are seven vessels that display a more elaborate form of motif M6a. These stand out due to the addition of decorative features or the emphasis of existing features (Figure 7.12). Vessel 20757 from Surčin highlights elaboration in the form of additional horizontal lines. Vessel 19846 from Vatin in contrast demonstrates an additional loop. At Tolvadia, vessel 11820 displays an example of an M6a motif where the curvature of the loops is exaggerated. At Karaburma, elaboration presents itself as added curvature to the middle stem (vessel 3406). Karaburma also has another vessel (7156) showing an elaborate form of M6a, consisting of an added loop and additional horizontal line. Vessel 8850 from Belegiš – Stojića Gumno demonstrates elaboration in the form of a horizontal line at the bottom of the motif. Finally, vessel 8877 at Belegiš – Stojića Gumno exhibits an elaborate form of M6a consisting of additional outer looped stems. Each of these seven elaborate variations of M6a motif was systematically replicated in exactly the same way four times on each vessel, either above in between the handles. This suggests that the elaboration was deliberately devised and was therefore not accidental.

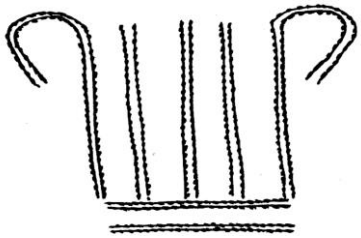
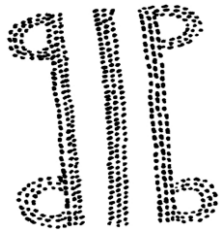
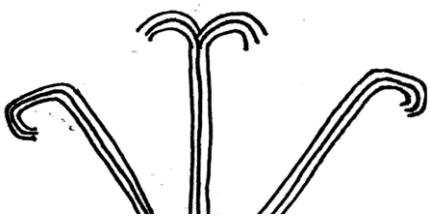
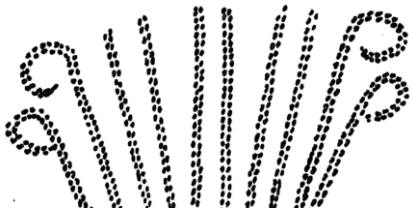
 Surčin: 20757	 Vatin: 19846
 Tolvadia: 11820	 Karaburma: 3406
 Karaburma: 7156	 Belegiš – Stojica Gumno: 8850
 Belegiš – Stojica Gumno: 8877	

Figure 7.12. Examples of Elaborate M6a motifs.

Motifs M6b, M7a and M8a and M8b also demonstrate variation in configuration and decorative technique (Figure 7.13). Often motif M6b demonstrates subtle differences in configuration, once again in terms of the number of stems and curvature of the outer loops, as well as showing differences in the decorative technique used.

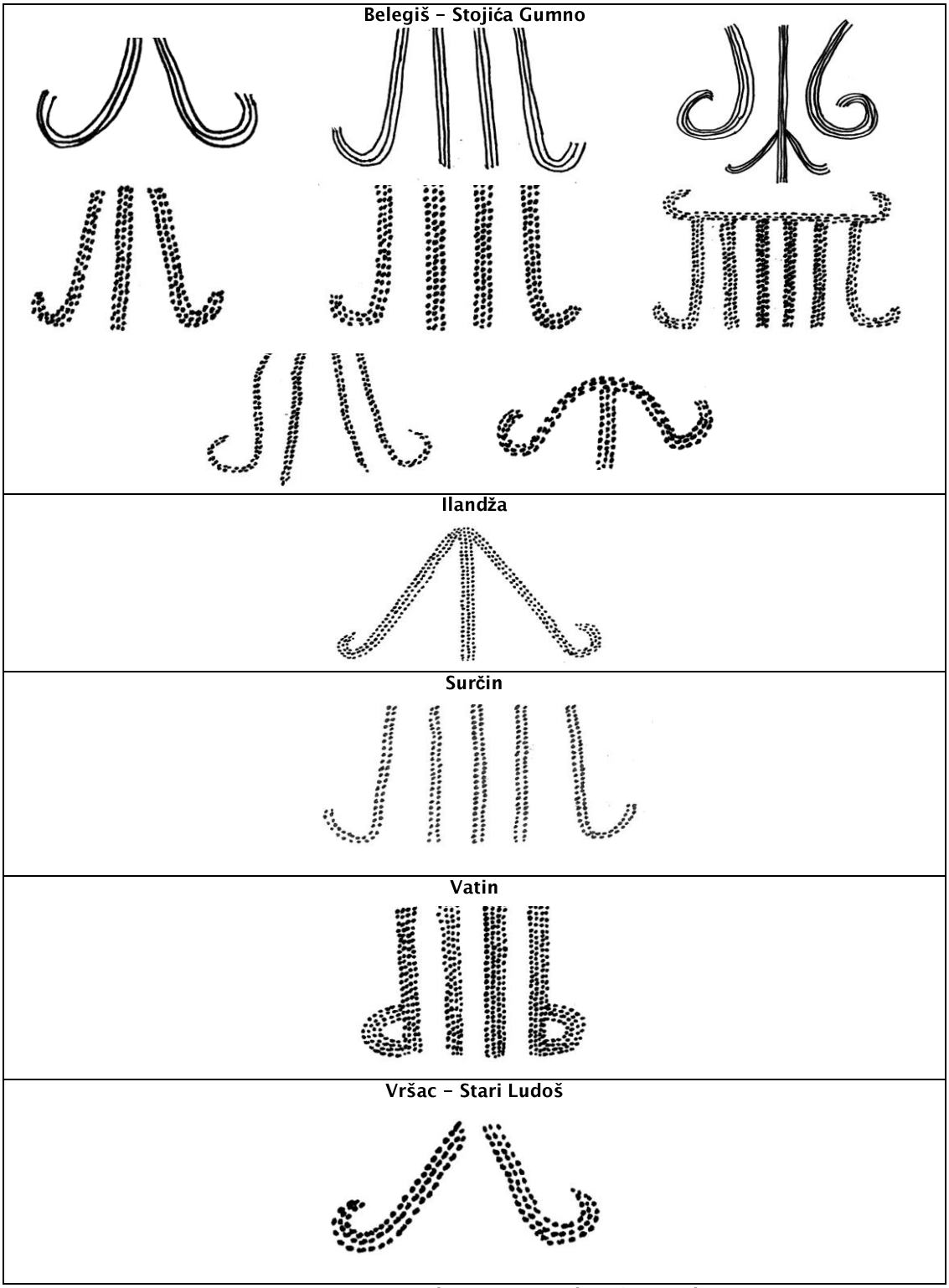
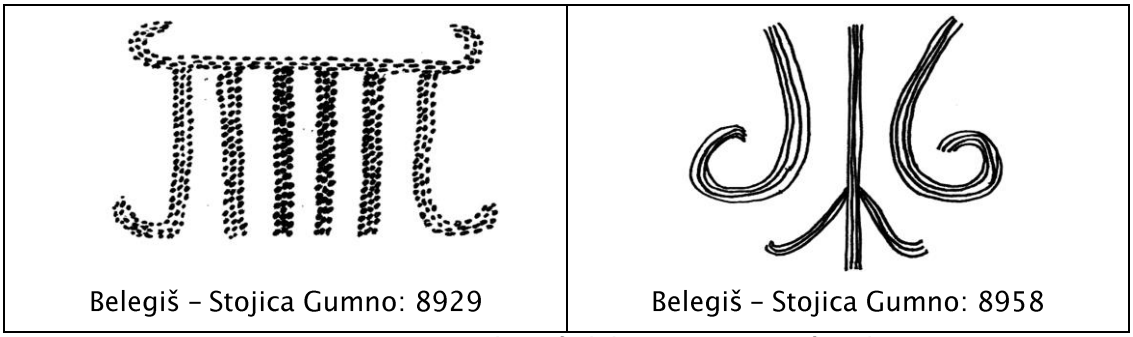


Figure 7.13. Configurations of M6b Motif.

Of these varying configurations of M6b, two vessels display elaborate forms (Figure 7.14). Vessel 8929 demonstrates an example of M6b that has an additional horizontal decorative element laced at the top and vessel 8958 shows an example that has decorative elements added to the middle stem. Despite having a similar geometry to motif M6a, these motifs shown in Figure 7.13 were elaborated in different ways.



Belegiš – Stojica Gumno: 8929 | Belegiš – Stojica Gumno: 8958

Figure 7.14. Examples of Elaborate Forms of M6b.

Motif M7a demonstrates variations in configuration in terms of the number of offshoots and the degree to which the curve (Figure 7.15). They were also articulated through different decorative techniques such as double and triple cord impression and double incised combing.

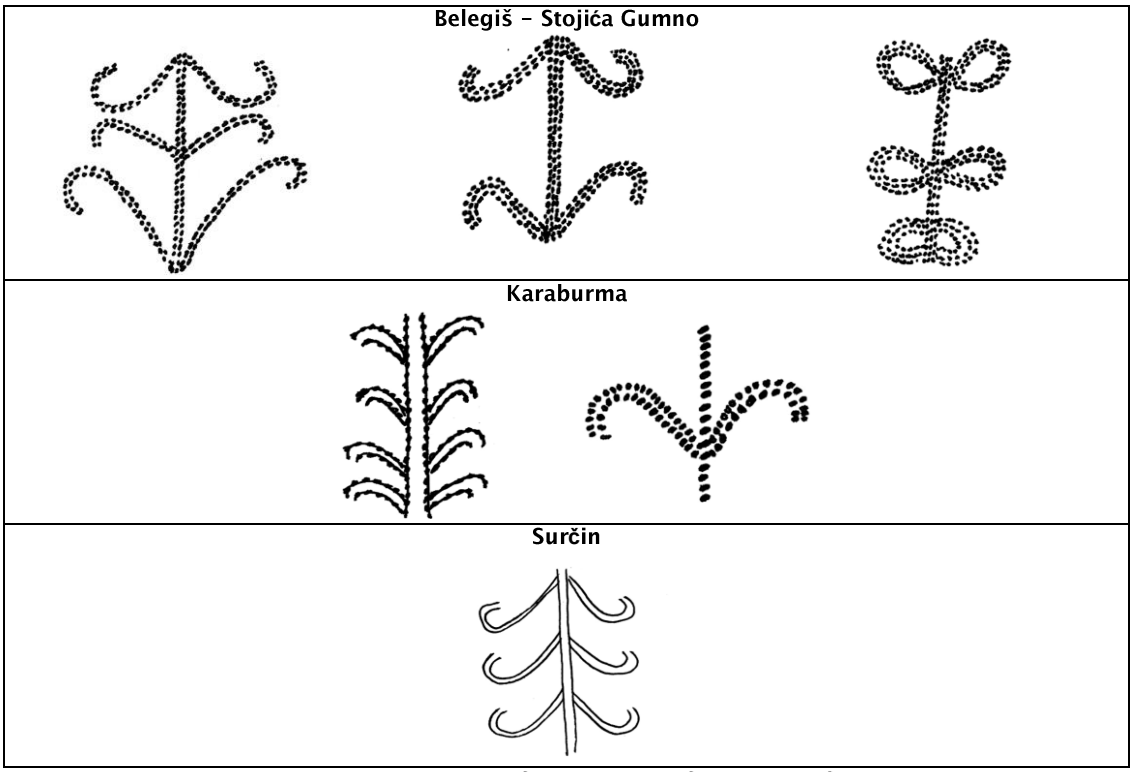


Figure 7.15. Configurations of M7a Motif

M8a displays differences in configuration highlighted by varied number of decorative elements and the direction of the outer curves (Figure 7.16). Furthermore, a range of decorative techniques was employed to articulate them, including double and triple incision in addition to double and triple cord impressions.

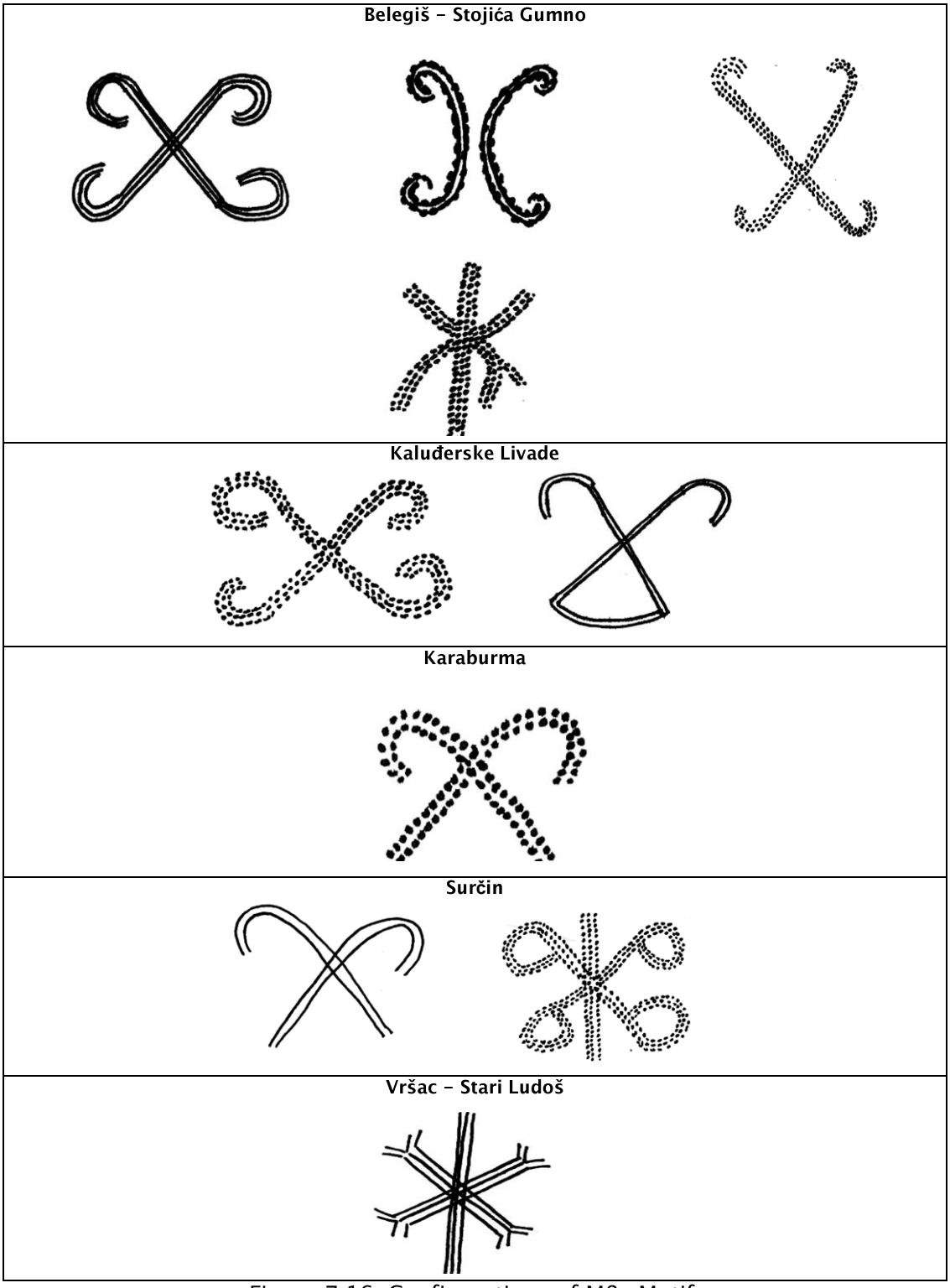


Figure 7.16. Configurations of M8a Motif.

Motif M8b displays differences in configuration highlighted by the manner in which decorative elements were arranged (Figure 7.17). These differences are often subtle. Once again, variation occurs in the decorative techniques used to execute them.

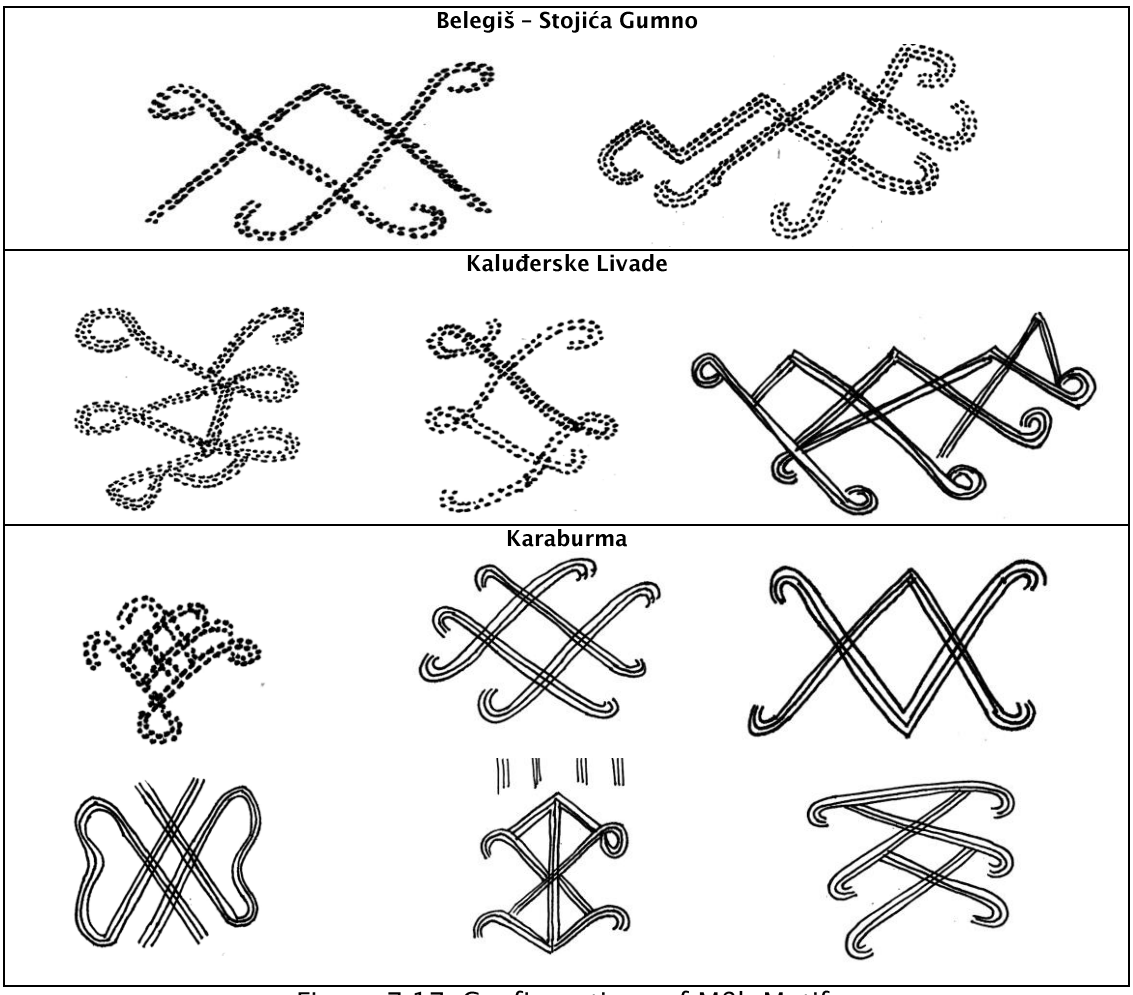


Figure 7.17. Configurations of M8b Motif.

Despite the fact that most of the examples of M8b display subtle differences, two vessels from Karaburma show examples of M8b that are more elaborate than the rest (Figure 7.18). Vessel 3508 displays M8b motifs with adjoining outer decorative elements. Vessel 3501 shows examples of M8b with additional decorative stems.

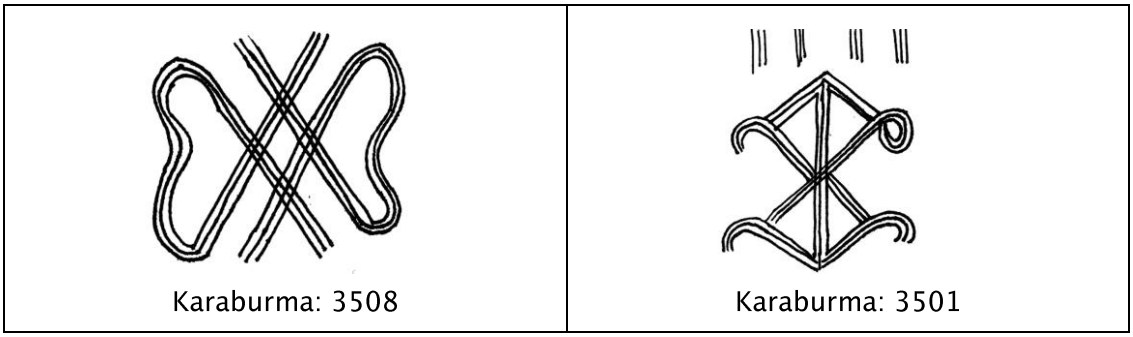


Figure 7.18. Examples of Elaborate M8b Forms.

From the whole Belegiš motif repertoire, motifs M6a, M6b, M7a, M8a and M8b display the most variation in configuration and therefore seem to be motifs that lend themselves to elaboration. Each of these motifs occurs on the belly. It is

suggested that due to the fact that the belly is the most protruding part of the vessel, it naturally draws the eye meaning that elaborations of these motifs are emphasised. Each of these motifs is composed of multiple decorative elements that have the potential for assembly in multiple ways. It may be that the reason these motifs demonstrate elaboration is because their form lends them to this particular creative process. This suggests that there were different *degrees* of creativity, from subtle to obvious. Each example is novel in some way and yet once again they are not truly novel in the sense that they sprang from nothing. These configurations of motif were instead guided by the same decorative goal.

As was demonstrated in Chapter 5 and Chapter 6, Belegiš I vessels typically demonstrate decoration in the form of two dimensional motifs. These comprise complex motifs or simple parallel bands created through combing or cord impressions. The elaboration seen in motifs M1a and M6a is therefore two-dimensional in form. In comparison, Belegiš II vessels do not display elaborate forms of decoration because the motifs, such as M5a, are relatively simple. Belegiš II decoration almost exclusively consists of parallel bands created with faceting and fluting techniques. Whereas Belegiš I urns often display small or medium sized bosses, Belegiš II urns demonstrate widespread execution of larger bosses. Therefore as well as elaborate forms of decoration, certain forms of decoration express exaggerated forms. Rather than adding decorative elements, makers embellished decorative elements.

It was suggested in Chapter 5 that the difference between Belegiš I and II demonstrates a move towards standardisation within the later period of manufacture. However, it also highlights a shift towards more exaggerated forms of decoration, highlighted by the transition from the two dimensional decoration and small subtle bosses of Belegiš I, to the three dimensional decoration characteristic of Late Bronze Age Belegiš II. This move towards more exaggerated decorative forms had arguably already taken place during the Middle Bronze Age in the Carpathian basin. Examples of ceramic bowls of consistent with Vatya III from sites such as Cegléd-Öreghegy demonstrate extremely pronounced bosses (Bóna 1975). It is possible therefore this mirrors a shift in aesthetic goals that spread throughout central Europe and the Balkans over time. Of course, more data and a more detailed chronological sequence are required to explore this suggestion. Nonetheless, in terms of Belegiš urns, these exaggerations were created with new techniques that created deeper groves within the vessel wall or through the addition of extra clay to create more protruding bosses. These decorative methods give a qualitatively different decorative effect and although the two types of vessel are part of the same phenomenon, they look strikingly different. It can consequently be argued that these shifts in decorative method parallel a change in aesthetic desire and that

creativity sits within the implementation and widespread adoption of such techniques. There is of course a time depth suggested within this statement that the low resolution dating of the data cannot show. However, it is clear that once these techniques were introduced, they became methods of manufacture that were integrated by groups of makers.

As discussed in Chapter 5, the incorporation of these techniques into Belegiš manufacture mirrors more widespread changes in pottery production. Material from neighbouring areas in Romania such as the Gava complex shows the use of fluting to create three dimensional channels on the vessel surface. A characteristic of Urnfield pottery found further north is also the use of this type of decorative technique (Didzar et. al. 2011). This suggests therefore that there may have been interaction between different groups of pottery manufacturers. Consequently it is evident that creativity once again is not the creation of the new out of nothing, but a reworking and merging of already established methods of manufacture. Creativity therefore sits within these networks of technological knowledge.

7.1.3 Creativity as Mimesis

Mimesis is the principle of recreation and is a concept that lies at the heart of 'attempts to make sense of representational art and its values' (Halliwell 2009: vii). It has been argued that an understanding of mimesis should not be limited to simply considering is as *imitation*. Instead, it also encompasses *representation* as the portrayal of something in a particular way, and expression, which Halliwell defines as 'sensory representation of non-sensory properties' (2009:15). Although the concept of mimesis derives from art history, the bringing together of imitation, representation and expression highlight that mimesis is a complex *process* that creates objects embodying simulacra (Sofaer: in press). It is suggested that the idea of mimesis presents another angle from which to explore creativity within the production of Belegiš urns.

As was discussed within Chapter 6, makers of Belegiš urns often impressed their pots with strands of cord in order to create decorative patterns. There are, however, two vessels within the assemblage that display cord-like impressions that were administered through different techniques. These are discussed below.

Vessel 20698 from Surčin displays pseudo-cord decoration, created with a twisted metal tool that was pressed into the clay at the leather hard stage (Figure 7.19a and 7.19b). The maker executed the decoration with careful precision, using a tool approximately three centimetres in length.




Figures 7.19a and 7.19b. Vessel 20698 from Surčin with Pseudo Cord Decoration

Vessel A377 from Ilandža also displays pseudo cord impressions (Figures 7.20a and 7.20b). These were, however, created using a four pronged comb implement. The maker used a punch and drag technique to create cord-like impressions along the wet clay.




Figures 7.20a and 7.20b. Vessel A377 from Ilandža displaying pseudo cord impressions.

Both of these examples demonstrate the novel use of decorative techniques to reproduce an existing motif or particular decorative effect in the form of pseudo cord impressions. One could interpret this novelty as a type of skeuomorphism, where a particular technique is used in order to evoke the appearance of having

used another (Knappett 2002:108). Based on Alfred Gell's (1998) ideas on imitation, this has been termed as 'sympathetic magic' (Knappett 2002:111) and the bending of reality, where something claims to be something it isn't. Using this understanding of mimesis as a platform, there have been several publications that have focussed on the role of skeuomorphism within the production of ceramic vessels. In particular these focus on metalwork, where burnished ceramic surface finishes are argued to evoke the light reflective qualities of metal, and basketry, where patterns on the ceramic vessel surface are suggested to take on the characteristics of baskets (Knappett 2002, 2004; Manby 1995; Walsh 2014). These discussions are often centred on cross-craft interactions where material crossovers are considered to be 'the physical traces of overlapping networks of production' (Rebay Salisbury, Brysbaert and Foxhall 2014). However, within the context of the pseudo-cords on the aforementioned Belegiš urns, the concept of skeuomorphism may not necessarily be the most appropriate approach. The vessel itself is not an imitation of another object type nor did the makers necessarily want to create the look of having specifically used cord. Instead these two examples may simply demonstrate a *reproduction* of a desired visual effect in novel ways. The decoration gives the *illusion* of having been created with cord.

It is interesting to note that mimesis occurs on vessels 20698 and A377 in a similar manner, and these vessels highlight the bringing together of an existing aesthetic goal with a new technique. Creativity therefore lies within the execution of the decoration. Although the final outcome is subtle, the technological traces left upon the vessel surface communicate a novel set of gestures and tools that were used in order to achieve the intended decorative result. Consequently, these examples of mimesis can be thought of as a creative response to a desired decorative effect, and equally suggest that creativity sits within gestures and therefore the body, not simply the mind. This is expanded upon further on in section 7.3.

7.1.4 Creativity as Incorporation

Within the assemblage there are several vessels that stand out due to the incorporation of decorative features that are not usually associated with the Belegiš phenomenon. These are described below.

Vessels 9958 and 9970 from Vatin have small handles placed on the shoulder (Figures 7.21 and 7.22). It is unknown as to whether these would have had a functional use. They may instead been applied for decorative purposes. These were placed in the usual position that applied bosses were placed, aligned in between the vessels' main handles.



Figure 7.21. Vessel 9958 from Vatin with shoulder handle



Figure 7.22. Vessel 9970 from Vatin with shoulder handle.

The decorative feature of applied cordons is novel to three vessels from Vršac – Stari Ludoš. Vessels 10596 (Figure 7.23) and 10380 (Figure 7.24) display applied cordons around the belly of vessel. Vessel 10443 has an applied cordon placed on the neck.

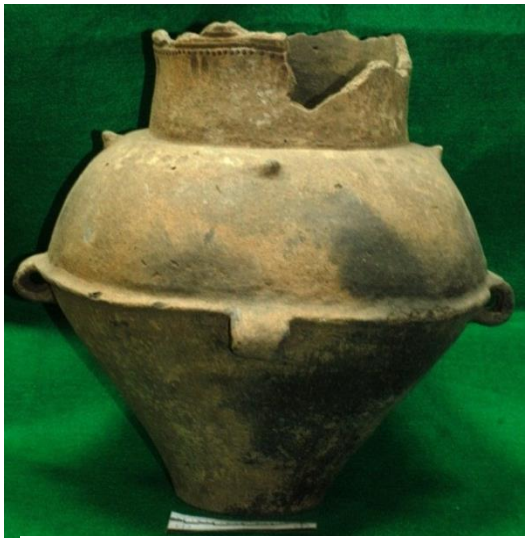


Figure 7.23. Vessel 10596 from Vršac – Stari Ludoš with applied cordon



Figure 7.24. Vessel 10380 from Vršac – Stari Ludoš with applied cordon

These examples reflect the incorporation of novel decorative elements within the manufacture of an existing vessel type. The application of cordons is a decorative technique that has been noted elsewhere in Bronze Age central Europe (Kovács 1975) but is novel to the wider dataset of Belegiš urns analysed within this study. Similarly small shoulder handles feature on Middle Bronze Age vessels from neighbouring groups such as the Vatya of the Carpathian basin (Bóna 1975). It is

therefore possible that these examples once again suggest influences with neighbouring groups of makers and consequently this particular method of manufacture became included within the production of these Belegiš urns. The process of incorporation is distinct from combination and elaboration because rather than reassembling operative technological knowledge within a group of makers, it is the bringing in of an additional manufacturing method from outside of the existing Belegiš pool of socio-technical knowledge. This can be argued to be a creative process because it represents a reconfiguration of co-existing manufacturing knowhow. Once again, it stresses that within the context of the Belegiš phenomenon, creativity is not the creation of something out of nothing.

In studies of contemporary creativity the creative process has been shown to be a collaborative one (Campbell 1969). The examples described above also dispel the idea that creativity in the context of Belegiš ceramics simply involved the individual. There are three examples of the use of shoulder handles, and four vessels that have applied cordons. Both pseudo handles and cordons are unique to the sites of Vatin and Vršac - Stari Ludoš. Slight differences in technical signatures between the vessels, namely the thicknesses and angle of the pseudo handles, reflect differences in the gestures used to decorate them. This suggests that the vessels were made by different makers. It is therefore possible that applied shoulder handles and cordons were introduced, accepted and replicated by makers at Vatin and Vršac - Stari Ludoš. This means that the incorporation of this decoration type may have initially been by one individual maker, but that this may have influenced other makers who drew upon the same methods. Although still only on a small number of vessels, the incorporation of pseudo handles as well as cordons on multiple vessels suggests that creative action of the individual was never isolated but fed back to the wider social context in which it took place.

Another vessel stands out due to incorporation of a decorative technique that is unusual for Belegiš vessels. Vessel 1 from grave 17 at Stubarlija displays the use of inlaying technique where incised decoration was filled with a white substance (Figure 7.25). The outcome is decoration that stands out due to a contrast of colour. It is a technique that has been noted in other pockets of Middle Bronze Age Europe, particularly in the Carpathian basin (Roberts, Sofaer and Kiss 2008). However, this is the only vessel within the analysed assemblage that exhibits the use of the inlay technique. Despite this, there are several vessels that display inlaid decoration from the site of Dubovac. As was explained in Chapter 3, this site is considered by culture-historians to be on the periphery of Belegiš distribution and the ceramic urns are argued to have different characteristics to Belegiš urns. Despite this, ceramic vessels that conform to Dubovac type have been found at the site of Vatin (Milleker 1905). These were not included within analysis because they were not

classically Belegiš, yet their presence at Vatin is suggestive of complexity; it cannot be presumed that these two sets of ceramic phenomenon were made by different social groups.

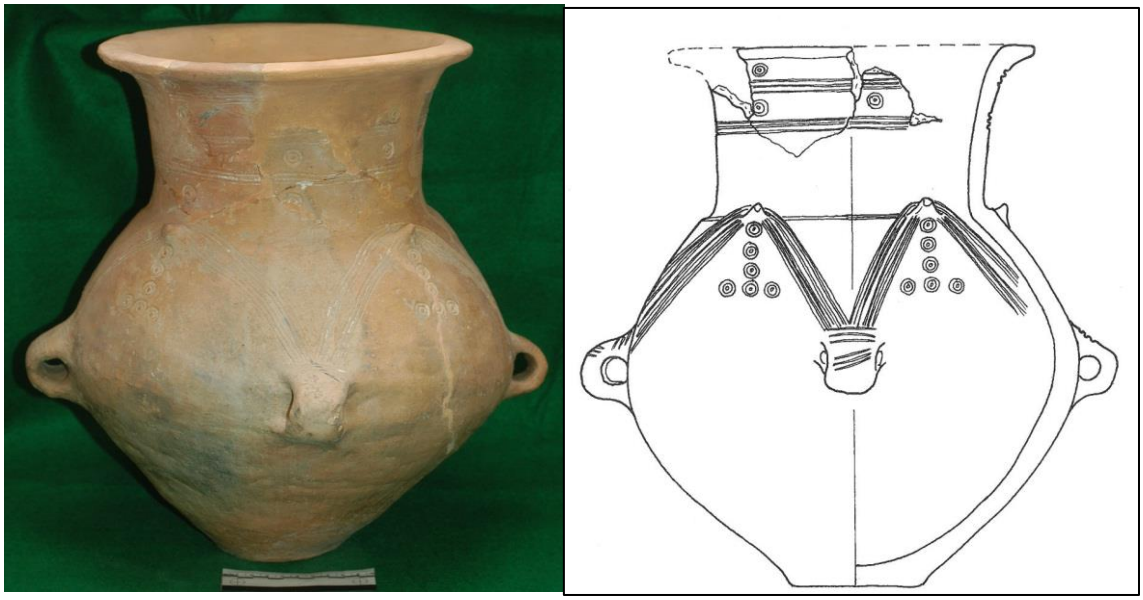


Figure 7.25. Vessel from grave 17, Stubarlija.

It cannot be ruled out that the vessel from grave 17 at Stubarlija was imported from a neighbouring region. However, as was displayed in Chapter 5, the shape of the vessel displaying an everted rim, a slightly tapered neck, a rounded belly and four tunnel handles placed at ninety degree intervals around the belly are typically Belegiš. Similarly, the decoration both in terms of spatial layout and motif type is also characteristic of Belegiš. Neck decoration consists of horizontal bands placed around the rim, with the addition of 'stamped' circles. Applied bosses were placed on the shoulder, aligned directly between the handles. Belly decoration comprises vertical stems made up of 'stamped' and inlaid circles and arches or inlaid decoration. This decoration was placed in between the handles, a usual layout for Belegiš urns. Horizontal bands, applied bosses and arches are all types of decorative motif that are central to the repertoire of Belegiš motifs. Consequently it is not too far of a stretch to argue that the vessel was most likely locally made but incorporated a method of decoration that was novel to the manufacture of Belegiš urns. If so, this again reflects the incorporation of a decorative technique that was established elsewhere to an existing repertoire of Belegiš manufacturing knowledge, and is a creative act of bringing two usually separate practices together.

7.1.5 Thinking through Novelty

The examples given and discussed above highlight that the traditional view of creativity as the creation of something out of nothing does not apply to Belegiš urns. It is clear therefore that instead each example of creative novelty within the

dataset presents itself as the reworking of existing manufacturing methods in a novel way. Therefore creativity is a social process because it involves networks of knowledge and these are bound up with social structures.

Hallam and Ingold (2007) view all novelty as creative. Yet the case of Belegiš urns demonstrates that there were degrees of creativity. The examples given also highlight that there are different degrees of creativity within the dataset. There are vessels that stand out because they display a high level of difference that was an outcome of combination, elaboration, mimesis and incorporation. These are very specific mechanisms that were involved in the creative process. Yet variation does not necessarily signal creativity but may instead be a product of other aspects of manufacture such as gesture (see Chapter 6). Exploration of motifs such as M6a highlights that each example of motif was novel in some way. Yet some motifs demonstrated more elaboration than others indicating that there was a scale of creativity within the context of motif articulation.

Within section 7.1, it has been suggested that creativity within the Belegiš phenomenon is signalled by novelty, but this was generated by different creative processes such as combination, elaboration, mimesis and incorporation. Therefore although novelty is a signifier of creativity, novelty within the dataset was produced through a variety of subtly different creative processes.

7.2. Creativity and Problem Solving

As was discussed in Chapter 2, it has been argued by psychologists that problem solving is a key facet of creativity (Runco 1994) and that this results in divergent or convergent behavioural outcomes (Runco 2007). The term problem solving implies the need for a solution and is related to cognitive processes such as learning and memory. Yet in the context of vessel manufacture it is also bound up with the technological task, the raw materials and tools available. A focus on engagement between maker, task and materials creates a platform from which to explore possible problem solving strategies within Belegiš manufacture. From this the relationship between creativity and technical competency in the context of Belegiš craft may be also probed. Examples of individual vessels are given and explored accordingly below.

7.2.1 Creativity and Technical Competency

Several vessels express modifications to usual techniques. Vessel 20710 from Surčin exhibits decoration created by both a cord impression and incised decoration

(Figure 7.26). These technological traces may suggest a perhaps sudden change in technique. It appears that initially the maker began creating decoration by impressing cord. During this process however the clay may have become too dry, meaning that impressing the cord would have been difficult. In order to work around this, the maker finished off the decoration with incised lines using a sharp tool. Vessel A384 at Ilandža also demonstrates a similar process where a maker mixed comb incision and cord impressions perhaps for the same reasons (Figure 7.27).

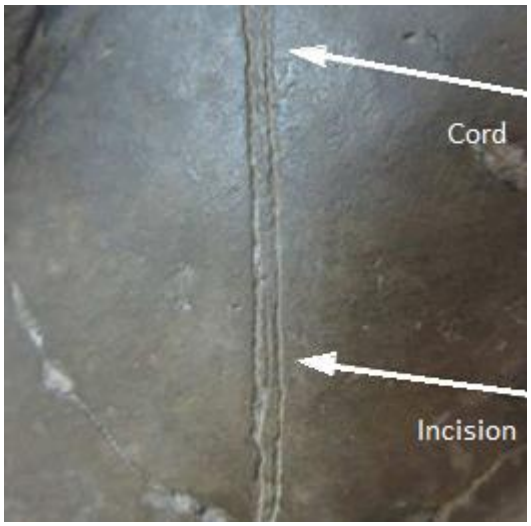


Figure 7.26. Vessel 20710 from Surčin showing cord impressed and incised decoration

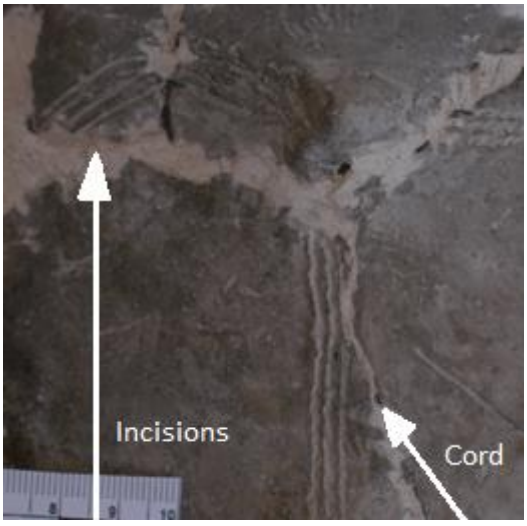


Figure 7.27. Vessel A384 from Ilandža showing cord impressed and incised decoration

Within these two examples, the switch to incision reflects a specific technical response to the shifting properties of the clay. The situation required a technical solution which the makers found in the form of continuation with incised combing. These examples therefore demonstrate the same problem solving strategy. It is clear that the shift from impressing cord to using the combing method is indicative of the use of a solution to create an intended decorative outcome. Although there are other ways that the issue could have been counteracted, such as wetting the clay, both makers decided to problem-solve using the same option. These examples are creative because they bring together two usually independent forms of technique to form a decorative solution, through combination of existing technological knowledge.

The examples given above highlight that within Belegiš manufacture there may have been a relationship between creativity and technical competency that is in need of being addressed. Competency within this context is the ability to carry out the technical tasks of manufacture successfully. Vessels 20170 from Surčin and A384 from Ilandža indicate that the requirement for problem solving strategies arose due to the fact that the makers were not able to keep the clay at the optimum conditions that facilitated the impression of cord.

There are other examples within the assemblage that highlight technical responses to an inability to achieve the intended outcome with the usual methods of production. Vessel 20711 from Surčin displays a quadripartite formation. This means that the vessel was fashioned out of four parts (Figures 7.28). The assemblage from Vatin also contains a quadripartite vessel 198913 (Figure 7.29). As was demonstrated in Chapter 5, typically Belegiš urns were either bipartite or tripartite. Both of examples of vessels from Surčin and Vatin however may demonstrate a modification in building methods.



Figure 7.28. Vessel 20711 from Surčin showing quadripartite formation



Figure 7.29. Vessel 198913 from Vatin showing quadripartite formation

An exploration of problem-solving allows for different possibilities of interpretation. It has been demonstrated that the more an action is repeated, the more proficient the actor becomes (Budden 2007). These two vessels both display an irregular belly shape and uneven surface. It is therefore suggested that habitus in the form of competent gestures may not yet have been formed and that the individuals making these vessels had not yet attained a high level of competency that would have been solidified with repetitive making. These vessels instead demonstrate a deviation from usual manufacturing methods. It is possible that this was not deliberate. This would mean that these examples simply show differences in gestures that are not necessarily creative, but arise from the lack of competency.

Alternatively, these vessels may also display the makers' efforts to make a particular shape of vessel to the best of their ability given their level of technical proficiency at that moment in time. This implies that the formation of a quadripartite vessel may have been a technical solution to an inability to successfully build a vessel in the usual manner. This can be argued to be creative because it is an addition of novel

methods to existing methods of manufacture in order to create a solution. In this way, these vessels represent examples of problem solving strategies within manufacture, but as Runco stated, an understanding of problem solving depends on how we define a problem (1994). Problem solving is therefore not always easy to establish because it is a matter of discerning motivation.

Another vessel within the dataset demonstrates novel technical response to existing methods of manufacture. Vessel 22501 from Tolvadia displays shoulder decoration in the form of applied bosses that were placed in typical locations on the shoulder, as described in Chapter 6. Their shape, however, is more flat than the majority of bosses, indicating that the maker was pinching the boss to create a different shape (Figures 7.30a and 7.30b). Although the placement of decoration conforms to Belegiš ideals relating to spatial layout, the technique used to execute it was different. This example highlights modification of a decorative method in order to achieve a slightly different finished outcome. Although this is subtle, this represents creativity in combination; an existing motif, in this case an applied boss, created with a slightly different set of gestures. It is suggested that vessels 20711, 198913 and 22501 demonstrate creative action that manifested as subtle responses to existing manufacture. This cannot however always be classed as problem-solving; vessel 22501 is an example of a technical response to manufacture that was not necessarily generated from the need for a solution.




Figures 7.30a and 7.30b. Vessel 22501 showing novel execution of bosses

7.2.3 Thinking through Problem Solving

It has been demonstrated above that creativity in the form of problem-solving has the potential to be identified within the dataset, yet locating it relies heavily on how the concept of problem is defined. Even so, examples of problem solving are few and far between which suggests that although it has been shown to be an important

aspect of creativity within research in other disciplines, in the context of Belegiš production it was not necessarily an integral process that facilitated diversity.

The examples given highlight that embedded within technical responses to existing modes of manufacture is the modification of gesture. It was demonstrated in Chapter 6 that gesture is a key aspect of practice. The aforementioned examples of creativity manifest as slight manipulations of practice and therefore it is suggested that creative processes can materialise within gesture. Therefore, although creativity is often associated with conceptual spaces in the mind (Boden 1998), it is clear from those examples that do show evidence for problem-solving that creative action within Belegiš manufacture was distributed through the maker's body through gesture, which extended into the clay (Malafouris 2004:57). This theoretical angle treats materials as extensions of people. Belegiš ceramic material culture is consequently a physical extension of these processes. It is therefore suggested that creativity is embodied, situated and distributed (Clark 1998). Additionally, creative action is shaped by the affordances of the raw materials at every given moment.

7.3. Thinking through Creativity and Belegiš

The concept of creativity offers another lens through which to explore how makers generated variation within the Belegiš phenomenon. Throughout section 7.1, creative novelty within the Belegiš phenomenon was explored through combination, elaboration, mimesis and incorporation; each of these presents a facet of creativity. Each facet however demonstrated that contrary to the traditional western view that creativity is originality divorced from social convention (Boden 1998) this was not how it manifested within the context of Belegiš production. In the case of these vessels, the anthropological understanding that creativity is the combination of existing practice sits more tightly with the material (Liep 2001:2). Creativity as combination appears as the bringing together of two co-existing motifs and/ or manufacturing methods. Elaboration in comparison is the building upon existing technological knowledge and a particular aesthetic goal. The requirement for a particular decorative finish within the production of a small number of urns led to the reproduction of decorative effects, and therefore mimesis, in novel ways, as well as the introduction of new techniques to create a qualitatively different decorative finish. Finally, creativity also came in the form of the incorporation of new decorative methods to an already established technological repertoire. The examples given within this chapter therefore show that creativity presents itself as novelty within the assemblage but that this was guided by a pre-existing network of technological knowhow. Each of these facets of creativity therefore integrates manufacturing knowledge, meaning that creativity presents itself as a reworking of

existing practices. Creativity within Belegiš urn manufacture was socially situated (Sawyer 2006:113) and social rules were the fertile ground from which novelty sprang. In examining the dataset, it becomes clear that the majority of vessels discussed within this chapter stand out from the assemblages due to novelty in *practice*, either through combination of motifs and/ or manufacturing knowledge, or problem-solving which occurred due to the need for a solution.

Hallam and Ingold propose that creativity is inseparable from performative engagement with materials (2007:3). Such a statement means that potentially all interactions and behaviours can be labelled as creative in some way because they embody responses to situations that are unique in some way. However, it is suggested within this study that there are degrees of creativity. Although there is much variation between Belegiš vessels, only a select number exhibited creativity in the form of combination, elaboration, mimesis and incorporation. Therefore although creativity was 'always in the making' (Jackson 1996), it materialised in different ways to various degrees through different creative processes. Highlighting this, the reassembly of existing decorative elements, as demonstrated with motif M6a, created a motif that was subtly unique. However, this can be considered less creative than an elaborate example of the same motif; examples of these motifs stand out from the dataset because they are products of the process of elaboration.

Exploring creativity within Bronze Age society also has ramifications for understanding the very nature of creativity itself. Experts in the field of contemporary creativity argue that the creative process, as the transformation of cultural practice, is a facilitator of change (Liep 2001:2). The case of Belegiš gives a time depth of 400 years through which we can explore this preposition. Often within modern society this change is seen as dynamic and revolutionary (ibid). However, within Belegiš Bronze Age society, shifts were gradual. Belegiš II type urns were a modification of Belegiš I. This is highlighted by the fact that both vessel types were made with a similar manufacturing repertoire, most noticeably the preparation of the clay, the forming techniques and the spatial layout of decoration. The shift came in the form of the preference for three dimensional decoration created by faceting, which made an appearance on a handful of Belegiš I vessels, and fluting, which only appears on Belegiš II urns. This gradual shift shows that creative processes do not necessarily have to incite dramatic change, but that instead there may be many permutations.

Chapter 8
Final Reflections
Thinking through Tradition, Practice and Creativity

8.1. Introduction

The aim of this research was to reengage with similarity and difference within material culture. It has been argued throughout that getting to grips with similarity and difference is at the core of all archaeological investigation, yet in recent decades we have failed to acknowledge why this is important and necessary. In order to address this, the focus on this research was to explore how similarity and difference was generated within a single phenomenon: Belegiš cremation urns from the region of Vojvodina. The concepts of tradition, practice and creativity were used as lenses through which to discuss this. Using these concepts has offered a fresh narrative by highlighting that the material be thought through in a different way.

8.2 Reflections on Similarity and Difference: Thinking through Tradition, Practice and Creativity

In order to explore tradition, practice and creativity, new ways of classifying the material and distinguishing patterns were required. Therefore although these theoretical lenses offer fresh a perspective and new ways of thinking through the Belegiš phenomenon, focussing on them is simply another way of identifying meaningful patterns within the material, much like typological or culture-historical approaches. Yet the difference between this approach and previous approaches is that the theoretical framework used encourages a more sophisticated socially-orientated narrative of the material.

Within the context of this research the concept of tradition has allowed for commonalities between the vessels to be explored through a single theme. This offered a macro-scale investigation, enabling isolation of aspects of manufacture that were shared across the region of Belegiš distribution and that continued over time. Analysis of the dataset demonstrated a clear core set of manufacturing principles, referred to within this research as the Belegiš blueprint. These similarities underpin the manufacture of every single vessel. It is what unites each vessel to the Belegiš phenomenon. Yet these core principles only represent one facet of the Belegiš as a tradition. Another important component of the tradition was the repertoire of technological options available. These represent a reserve of technological knowledge that makers were drawing upon. These options were shared across the Belegiš sites included within this study in various ways. The Belegiš phenomenon can therefore be conceptualised as a regional tradition of making a particular type of vessel.

The concept of practice illuminated the different ways in which the Belegiš tradition was enacted at two levels; community and the individual. There were differences in the execution of the tradition (that also corresponded to geography) and consequently three communities of practice were suggested. At the heart of this interpretation is the classification of the data into subsets. Instead of naming the subset a 'culture' as is the traditional culture-historical approach, within this research they are termed communities of practice. Although still undeniably a method of classifying the material,

The transmission of technology has been argued to be a hybrid of discursive knowledge, an understanding of what needs to be done, and the non-discursive, the knowledge of how to do something (Budden and Sofaer 2009). Ethnographic studies have also shown that there are two types of technological knowledge. The first is technological knowhow that is a result of close replication, that is to say transmitted from master to apprentice (Godal 1996:12). The second is self-acquired knowledge that comes from less supervised practice, and therefore much more trial and error (Greenfield et al. 2000). It has been demonstrated ethnographically that both supervised and unsupervised learning affect variation in material culture (Wallaert-Pêtre 2001: 471-491). Consequently the degree of variation in Belegiš manufacture may reflect strategies of learning. Belegiš I vessels display more variation, particularly in terms of decoration. This may reflect less 'scaffolded' learning, where practice included much more trial and error. There is noticeably more creativity within the Belegiš I group of vessels and for this reason it is suggested that freer, less supervised types of knowledge transmission may have fostered these creative processes. In contrast, Belegiš II vessels display more standardised technological traces which are perhaps suggestive of makers learning

more closely prescribed methods. Despite this, commonalities are shared by all vessels and therefore it can be argued that more open forms of learning still happen within the confines of what is socially and technologically appropriate, hence the reason we can class the Belegiš phenomenon as a tradition of manufacture.

A focus on practice enabled investigation into the ways in which Belegiš vessel making communities interacted with and manipulated the Belegiš tradition and allowed for the subtle play between similarity and difference to be explored. Although the vessels clearly conform to the Belegiš tradition, urns from different sites show differences in the way in which the guidelines of tradition were used. It is suggested that trends in the data demonstrate that there were three communities of Belegiš practice; eastern Srem, southern Banat and southern Bačka. The most noticeable difference between these communities is in the ways in which they decorated their urns. As was explained in more detail in Chapter 6, certain motifs were either exclusively used or appear in higher frequencies in specific communities. This is also the case for certain decorative methods and techniques. Despite the differences in practice between the communities, there is also considerable overlap. This highlights the transference of both technological knowledge between groups of makers and emphasises that all makers were producing their vessels within a wider social arena that extended beyond their community. The formation of these fuzzy sets is furthermore a testimony to the complexity of the Belegiš phenomenon. In terms of similarity and difference, there was intra-community similarity, with makers within a specific community practicing their craft in similar ways. Yet there were also differences between the communities. Therefore although tradition is mostly marked by similarity between the vessels, at the level of community practice there is subtle interplay between both similarity and difference.

Archaeological discussions of ceramic decoration have often turned to the concept of social identity as a means of understanding decorative variation. Gosselain (2000) states that decorative methods are the most malleable and visible aspects of technological repertoires, but that they also reflect the most 'superficial, situational and temporary facets of identity' (2000:209). He argues therefore that decoration shows only loose networks of social interaction. In light of this, the Belegiš phenomenon can be likened to an ocean. The deeper depths represent the stable methods of manufacture such as clay preparation, formation, finishing and firing. Representative as the most enduring aspects of Belegiš manufacture, these were the most resistant to change, both temporally and spatially. In contrast, decoration can be likened to waves on the surface of the ocean, being both visible and also the most open to changes and shifts depending on external factors. This suggests that although there are decorative differences between vessels made within different

communities, they may not reflect a real difference in local identities. Instead, these differences may only be at a superficial level. This means that culture-historical narratives of differences within Belegiš material culture as discussed in Chapter 3 can be questioned and replaced with an understanding that although two objects may look different, they may have been made within the same tradition. Superficial differences do not necessarily reflect differences in ethnicity and may reflect differences in communities of practice.

An exploration of practice within this study also gave space for tuning into the technical behaviour of individual makers. The analysis of technical traces allowed for an investigation into technical gesture, particularly for decoration, and it was demonstrated in Chapter 6 that differences in gesture resulted in different material outcomes. Categories of neat and rough execution of decoration may highlight differences in competency of technical application. This in turn speaks of learning processes. Neat application of techniques may signal more craft experience and proficiency whereas rough execution conversely suggests that an individual may have been more of a novice. Such differences in technical gestures therefore shed light on the dynamics of community practice by suggesting that makers engaged with the act of potting by simply learning as they went along. Variation in the categories of decorative execution may reflect different stages of motor habit formation. Categories of light and deep decoration also demonstrate differences in motor habits and these too may have been passed from maker to maker. They may also suggest different levels of competency. Focussing on individual technical behaviour highlights that the individual was responsible for differences in material outcome but that through the transmission of technological knowhow, these individuals operated within, and were therefore influenced by, the wider community of practice.

Creativity offered another window from which the individual's role in generating variation could be explored. Creativity, as the process of engagement between maker and material, presented itself within the Belegiš dataset in the following ways: combination, elaboration, imitation, mimesis, incorporation and problem-solving. It has been argued in Chapter 7 that creativity is a complex set of processes that have specific material outcomes. Although these often stand out as novel, creativity in the case of the Belegiš presents itself as a social process bound up with the relationship between maker and the collective. Each example of creativity was a reworking of existing manufacturing practice. Communities of practice and the wider Belegiš tradition therefore provided a context for creativity to take place. Creativity within this setting was consequently a response to these guidelines and expectations. The makers in question played with the boundaries of their craft and went beyond the familiar. Yet they still used tradition and existing methods of

practice as guidelines. Tradition and practice are therefore inextricably embedded within creative processes. Although all three aspects of manufacture can be separated for analytical clarity, the reality is that they are interlinked and depend upon each other somewhat.

8.3. Implications and Future Work

The theoretical framework used within this research has shaped both the way in which patterns were initially drawn out and the also ways in which they were explained. The ability to recognise patterns is not just limited to archaeologists of course, but is an automatic and ingrained cognitive process linked with sense, memory and thinking processes. A distilled definition of pattern recognition is that it is the process of gathering information, matching it with information in the long-term memory, and then recognizing the category (Pi et. al. 2008:435). This implies that it is bound up with knowledge and experience. The discipline of psychology has come up with a number of different models for understanding how this process works, the most relevant to the archaeologist being the Theory of Prototype. A prototype is not an exact copy of a certain pattern, but is in essence more flexible. The details are vague, because what are important are the key features. An example given by Pi et. al. is that although there are lots of different types of plane, the prototype for a plane is a long cylinder with two wings. Biederman (1987, 1990) builds upon this with the proposed theory of Recognition By Components, stating that the brain recognises that an object is constituted by some basic shapes or components. Therefore the way archaeology works as a discipline is very much shaped by how we as humans process information and recognise patterns.

Although pattern recognition is an ingrained and in some cases automatic process, it is the job of the archaeologist to delve deeper and not only classify the data and show emerging patterns, but to explain them. Previous approaches such as typology and culture-history used time and space as explanations for the patterns of similarity and difference, but what this thesis has shown is that the concepts of tradition, practice and creativity within a technologically-focussed framework, offers of a more sophisticated insight into the observable patterns, essentially looking at cause and effect within the manufacture of an object. Another key accomplishment of this research was the placement of people at the core of interpretation; it was shown how those making with and engaging with vessels were responsible for the patterns of similarity and difference within the corpus of material. All variation between the vessels occurred within specific technological boundaries, suggesting networks of knowledge exchange at different levels.

The methodological process used within this thesis can be argued to be a more detailed version of what a typologist might do; deconstructing an object by attributes and placing them into categories. In some ways this is the case, and although the vessels were not grouped into vessel types per se, they were placed into categories of some sorts in order to explore tradition and community. These categories were based yet again on similarity and difference in technological attributes. Yet through focussing on the technology and not just the morphological differences, the conclusions drawn to within this thesis centre on why there are different categories in the first place and how these similarities and differences came into being. In light of this, it can be said that by bringing in in a new theoretical lens, the need to classify is not rejected but acknowledged, embraced and explored further. The end result is a narrative of the material that centres on the many varying processes, both social and technological, that were intertwined with the production of the Belegiš phenomenon.

A key strength of this research is the robust and thorough methodological approach taken. The implemented methodology, based on a chaîne opératoire approach, enabled the pool of technological options used by the makers to be assessed. For those vessels from which primary data could be obtained, the technological traces of formation methods, decorative practice, surface finish and firing could be assessed. Yet a large number of the vessels within the sample could not be analysed first hand. Despite this, the methodology included analysis of decoration, including spatial layout, motifs and the methods used to execute them, and this could be conducted by using the detailed illustrations of the vessels that have already been published. This highlights that it is still possible to investigate and discuss tradition, practice and creativity within the context of technology, even when using secondary source material. Although of course there is nothing better than being able to look at and hold an artefact, those who are not able to do so need not be limited to one dimensional discussions of the material. The research presented within this thesis shows that a framework concentrated on thinking through how something was made (and in this particular case, decorated), allows for a technologically-focussed interpretation to be drawn from illustrative records.

Considering that the foundations of archaeological understanding rest on how we deal with and interpret similarity and difference within the archaeological record, this study is of direct relevance for all archaeologists working with material culture. Its theoretical underpinnings can be extended to all types of material and therefore the study has the potential to have an impact on how the wider discipline approaches archaeological assemblages. This research has shown that bringing our focus back onto such a fundamental aspect of archaeology, the recognition of

similarity and difference within the archaeological record and arming it with a suitable methodology, our narrative of the past can become more detailed.

It is felt by the author that this study also makes a significant contribution to an understanding of Bronze Age material culture in the northern Balkans by bringing a new approach into the region. Building upon recent archaeological research that is focussed on the processes that bring material culture into being, this research presents a new theoretical and methodological approach for understanding how similarity and difference in material culture is generated in order to create a more socially orientated narrative of the Bronze Age in this area. This serves to move us away from complicated typological investigations and bring us closer to understanding the very people who left such a material legacy. The robust methodology used could be easily tailored to investigate ceramic material from neighbouring areas and use it as a platform to assess the differences between vessels made by two so-called cultural groups. One such group is that of Dubovac Žuto Brdo. Transferring the approach from this thesis onto material culture from neighbouring areas may have the potential to elucidate these prescribed 'cultural' boundaries, demonstrating more similarities between the two sets of material culture than previously thought. This would offer a chance to rethink culture historical narratives of the Bronze Age that are still prevalent within this part of the world.

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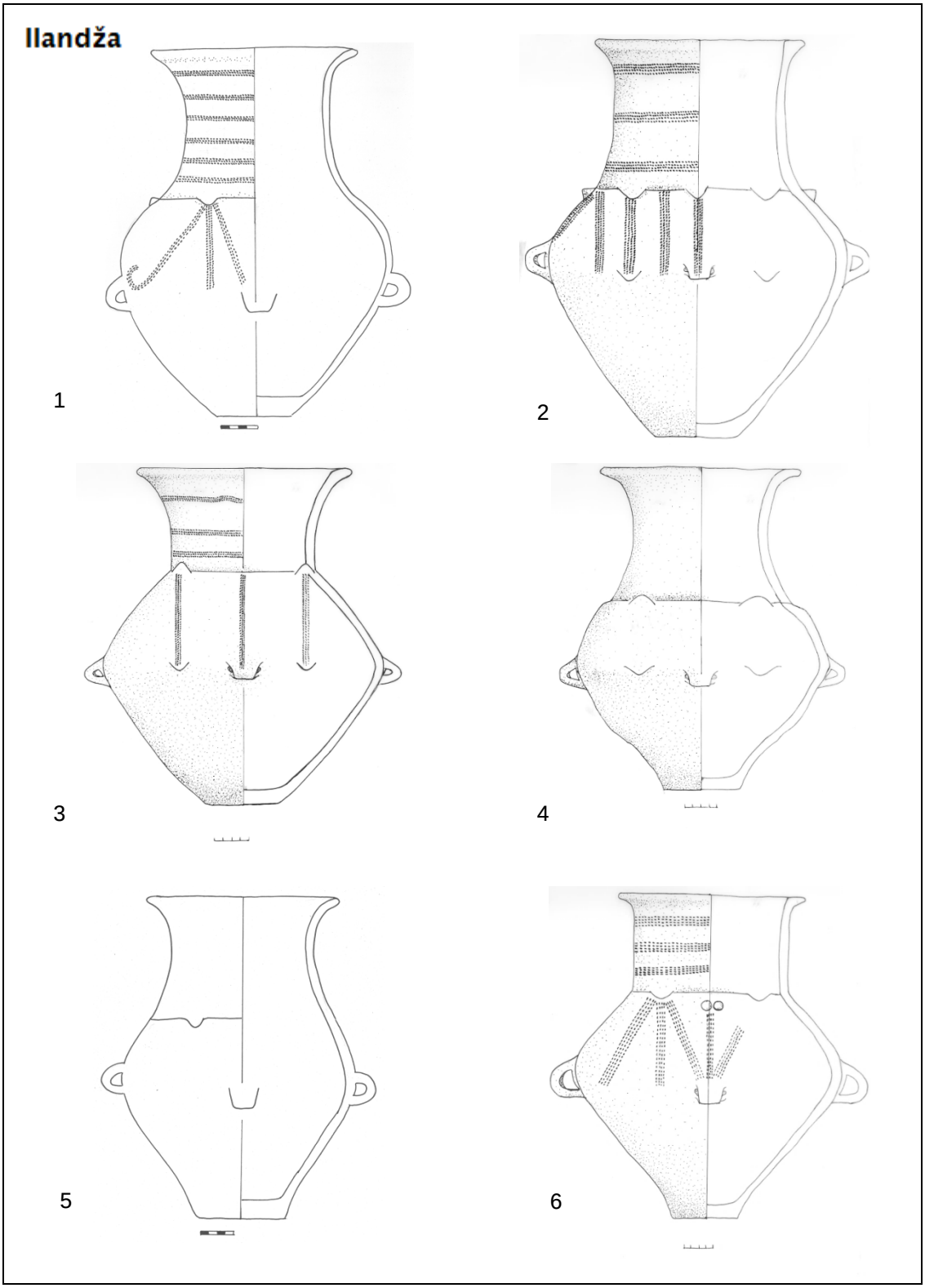
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Personal Communication:

Karina Grömer, at CinBA Conference, April 2013, Cambridge.

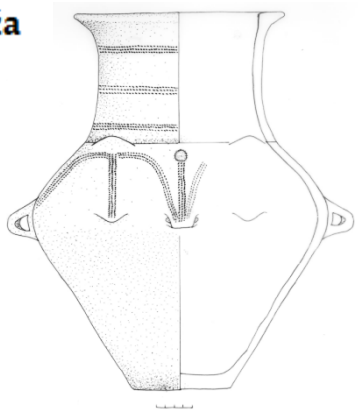
Jovan Koledin, at the Museum of Vojvodina, February 2013, Novi Sad.

Appendix I
Catalogue



Vessels from Museum of Vojvodina, Novi Sad. 1 – A312, 2 – A318, 3 – A314, 4 – A328, 5 - A375, 6- A377.

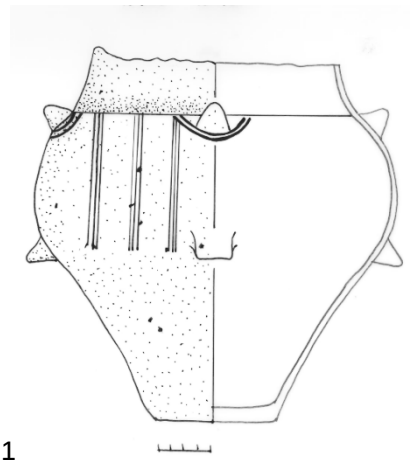
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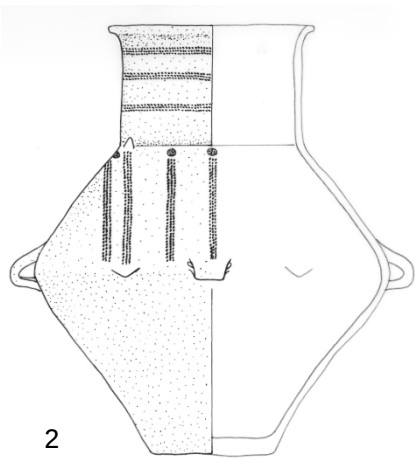
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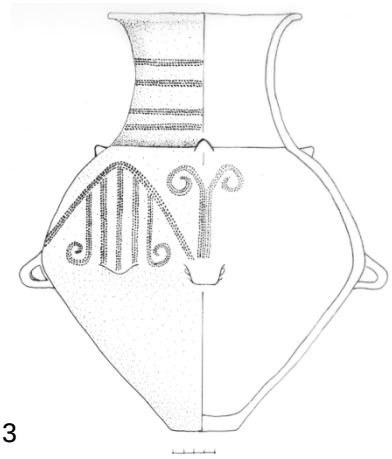
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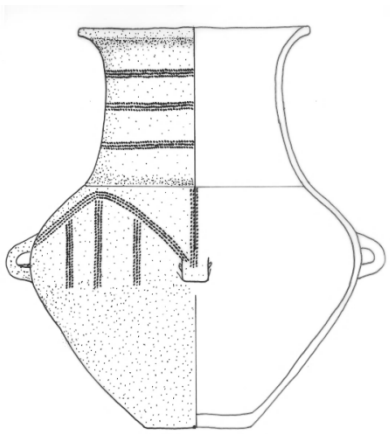
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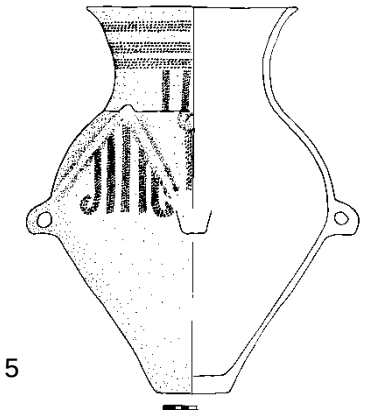
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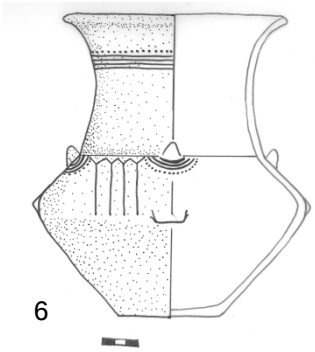
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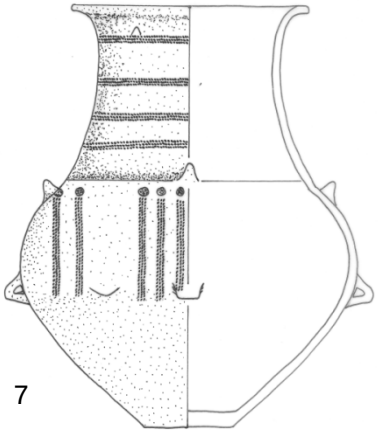
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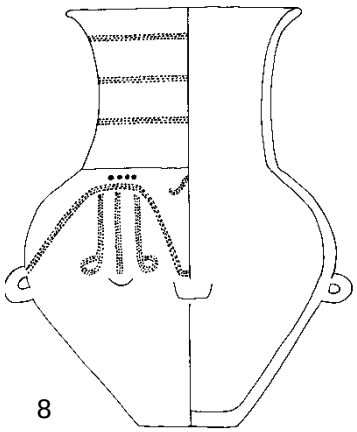
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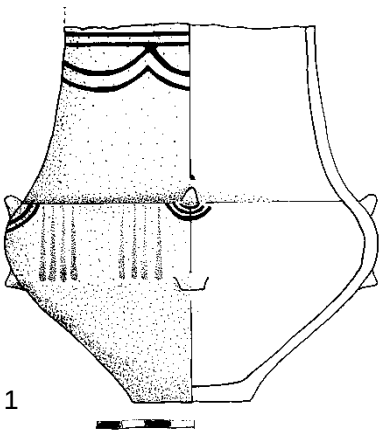
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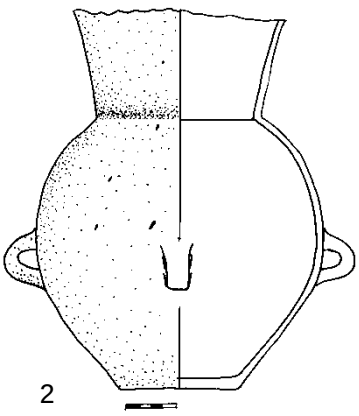
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Vatin



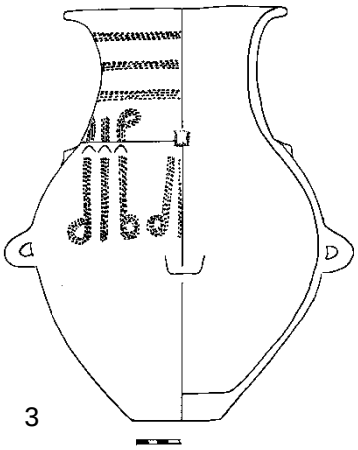
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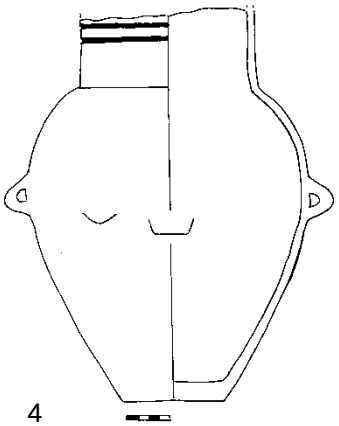
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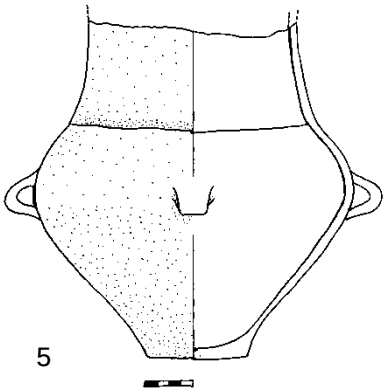
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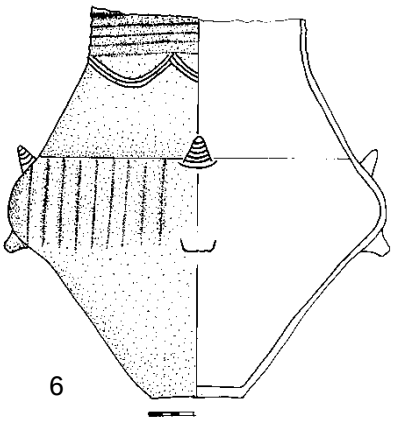
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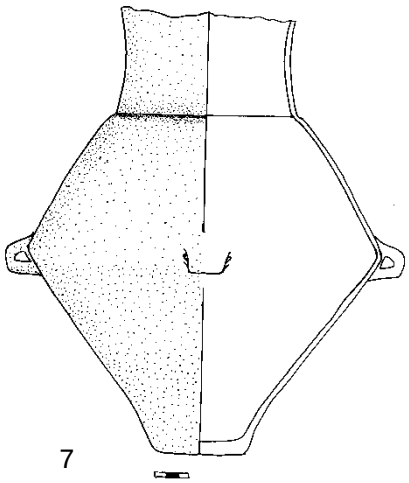
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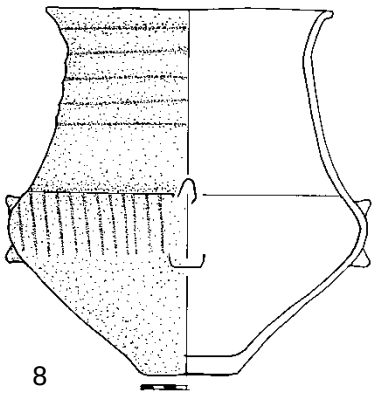
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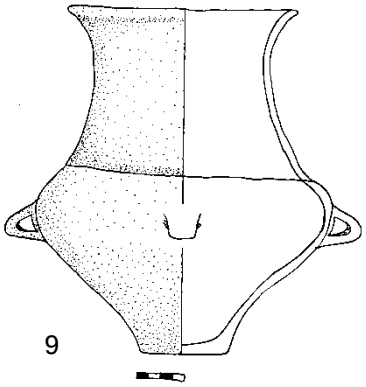
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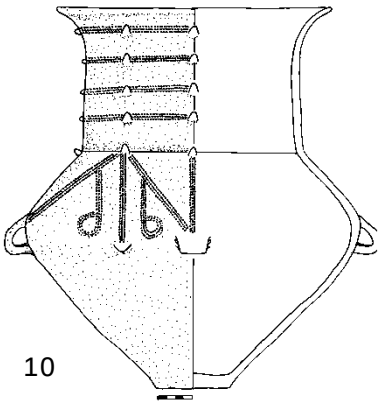
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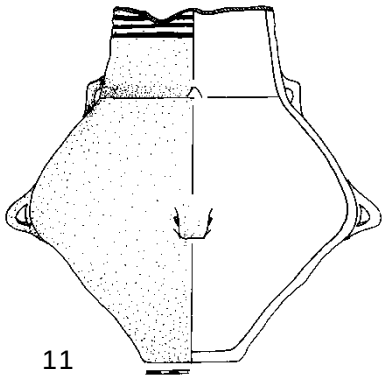
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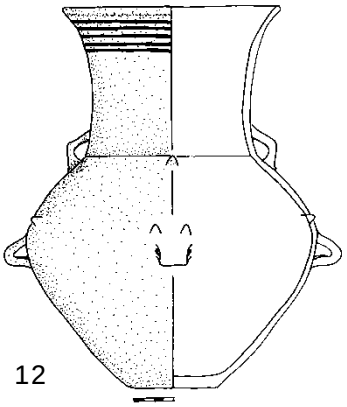
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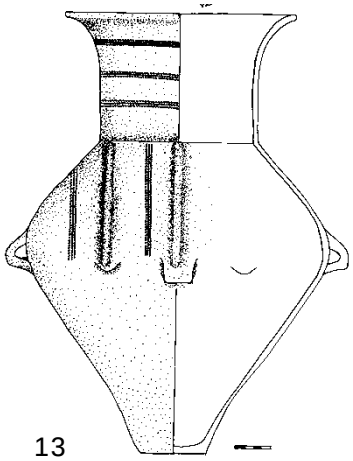
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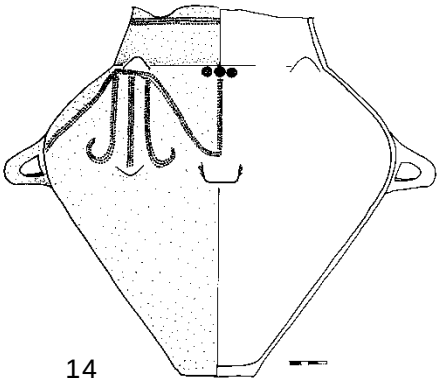
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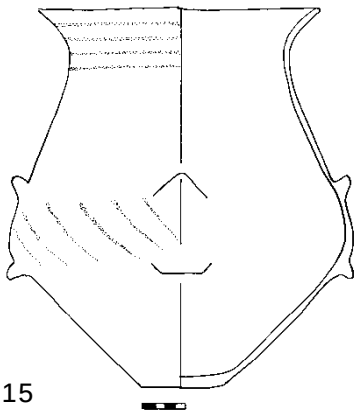
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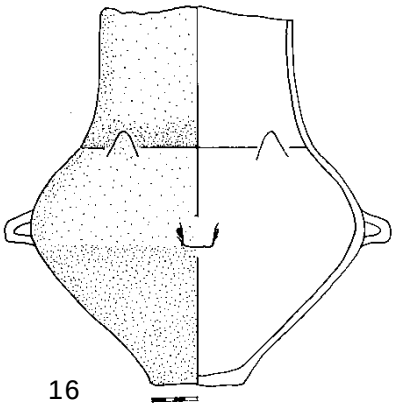
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Vessels from Vršac Museum, Vršac. 9- 9943, 10- 9950, 11- 9958, 12- 9970, 13- 9978, 14- 9987,

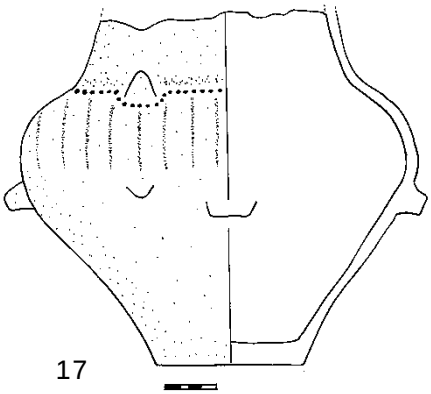
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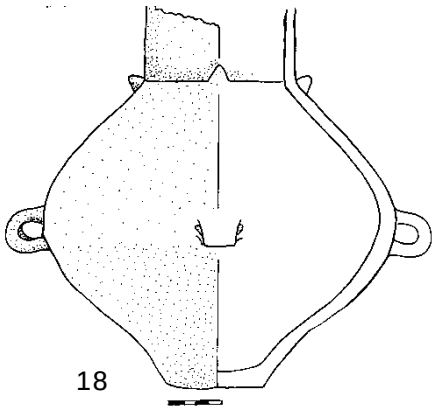
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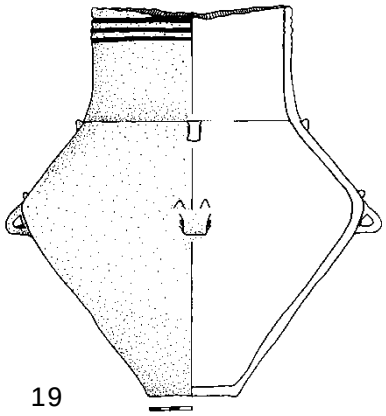
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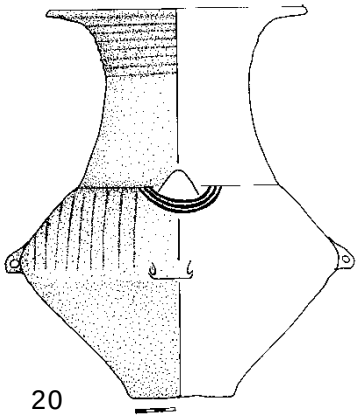
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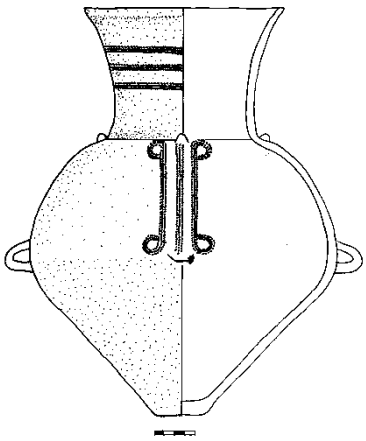
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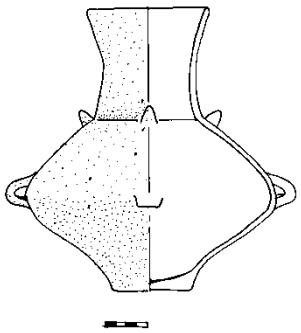


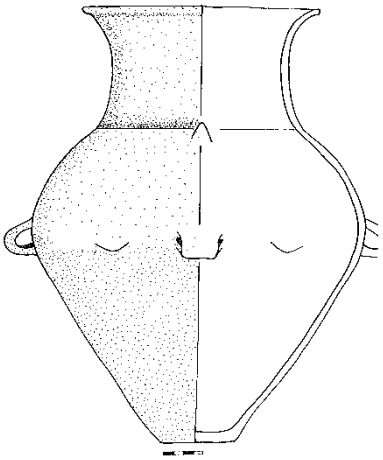
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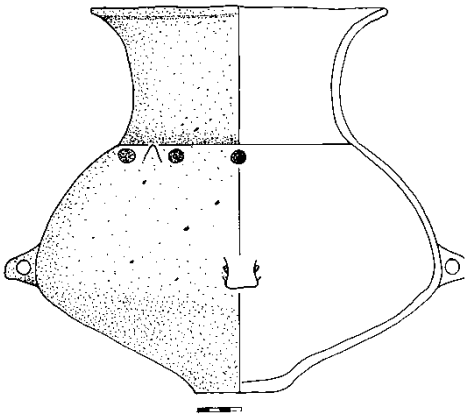
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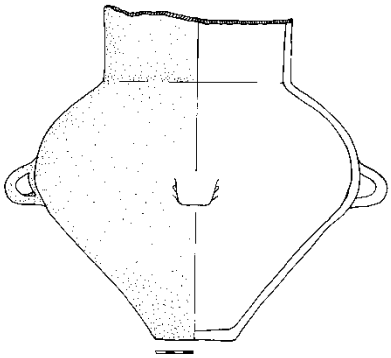
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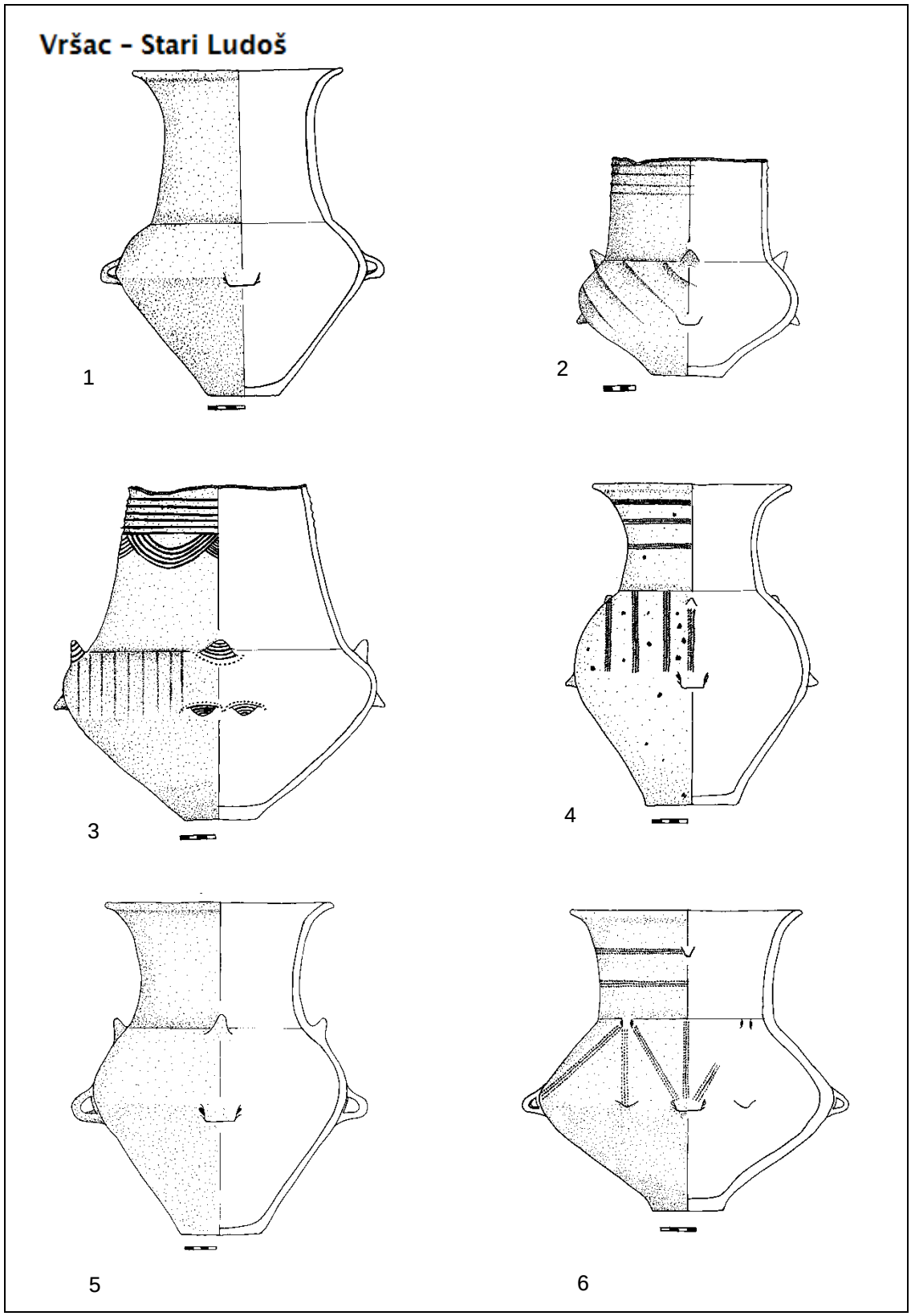






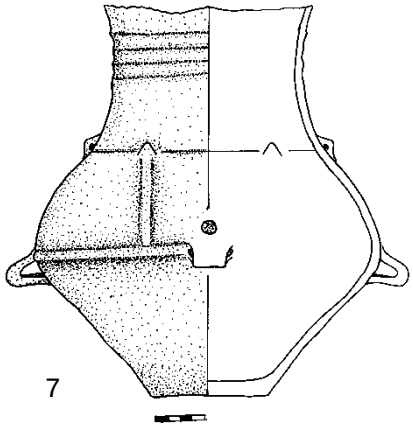


Vessels from Vršac Museum, Vršac. 21- 19846, 22- 19893 23- 21677, 24- 27627, 25- 27630.

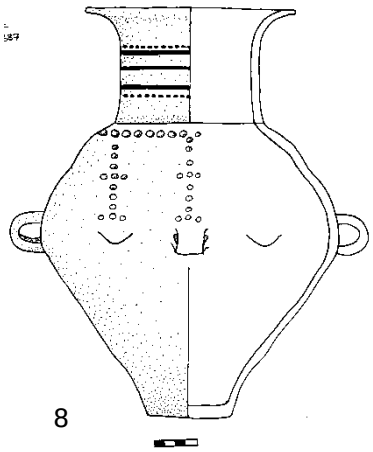


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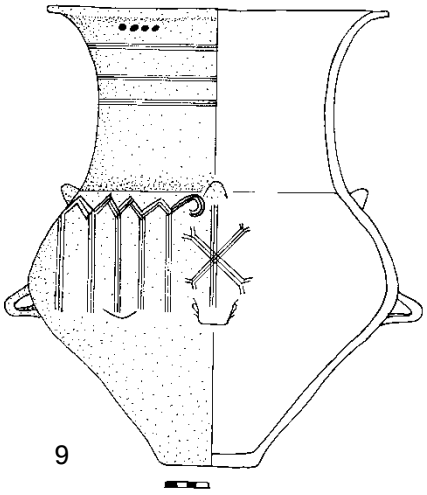
Vršac – Stari Ludoš



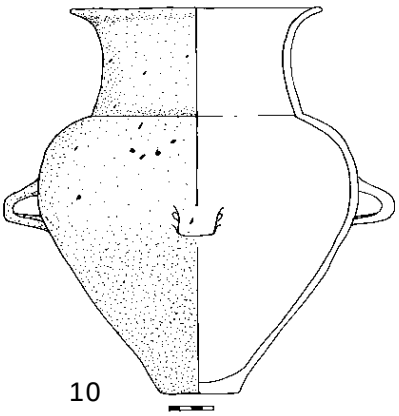
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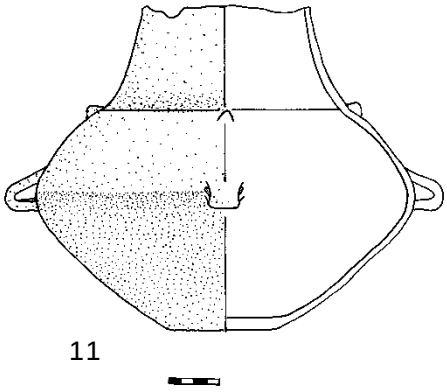
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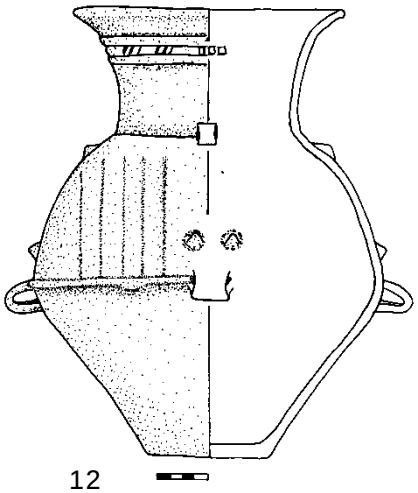
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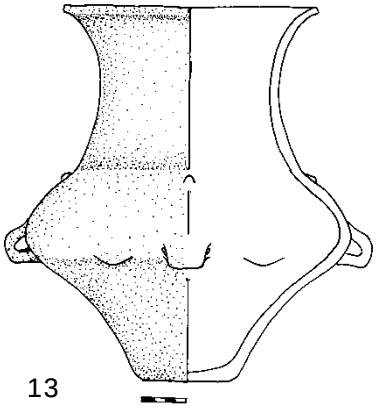
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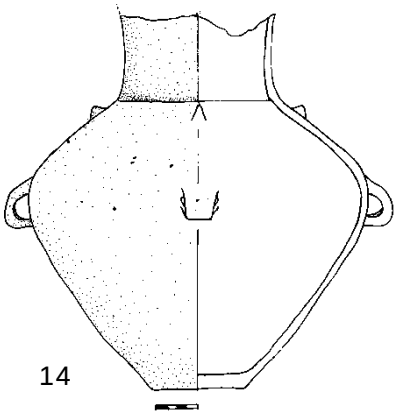
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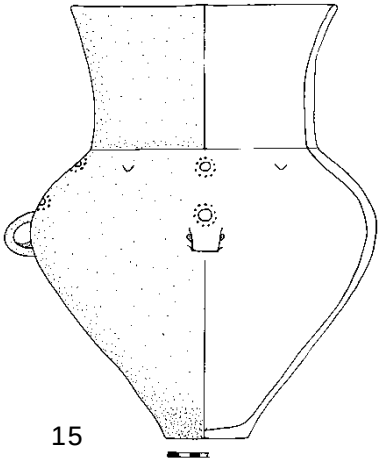
Vršac – Stari Ludoš



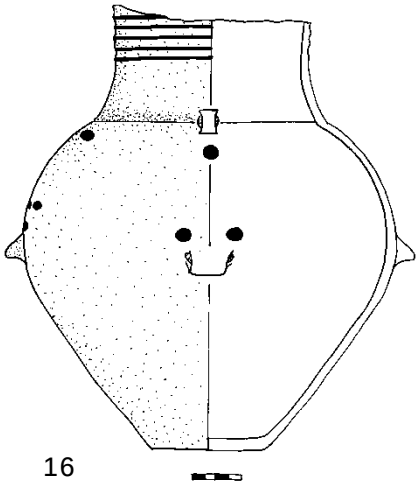
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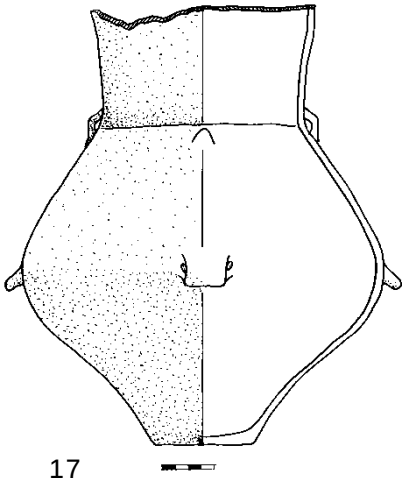
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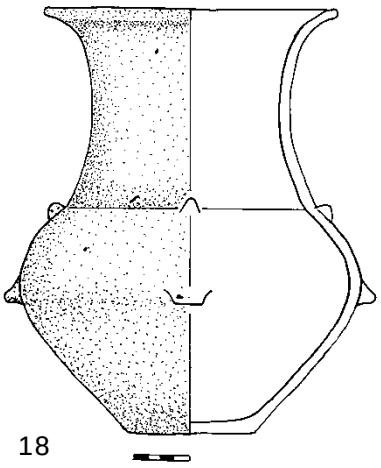
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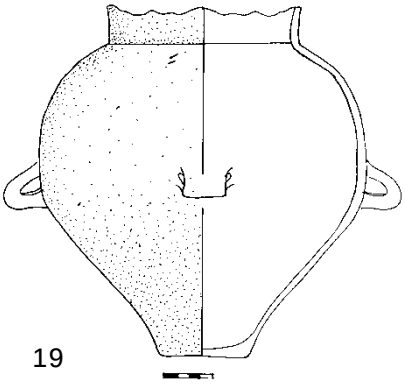
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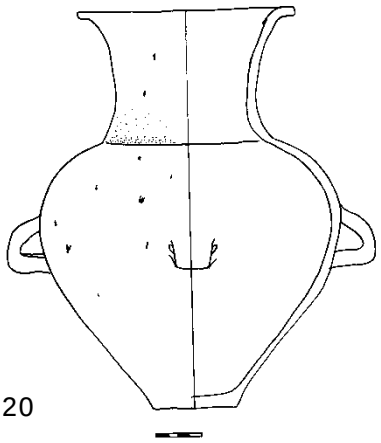
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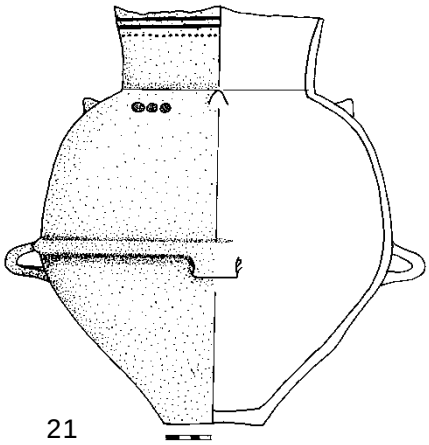
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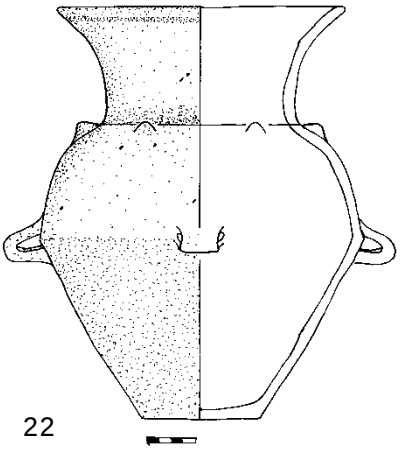
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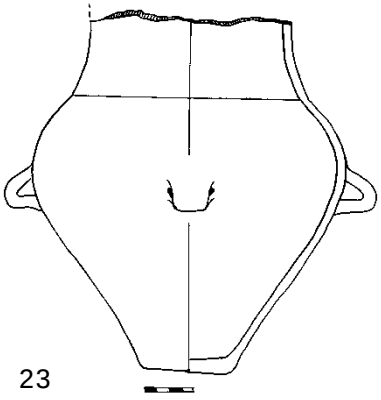
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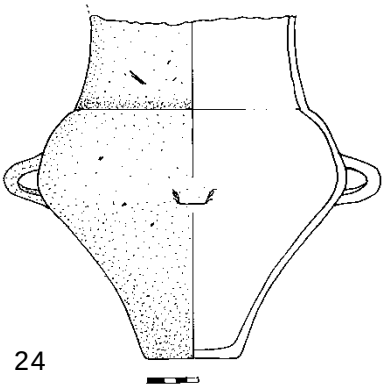
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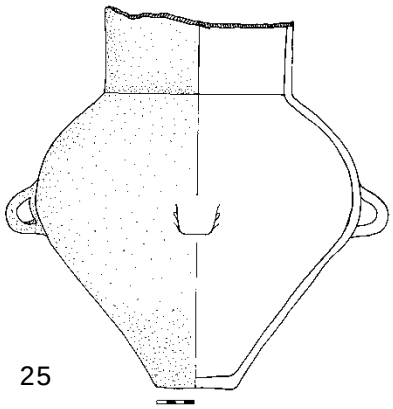
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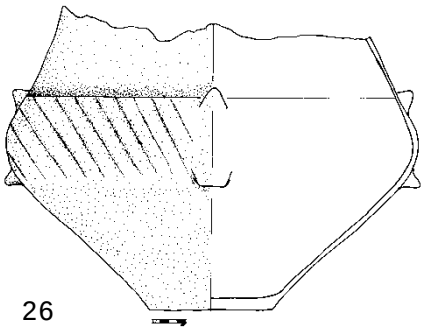
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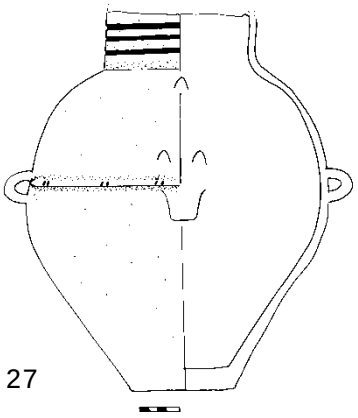
Vršac – Stari Ludoš



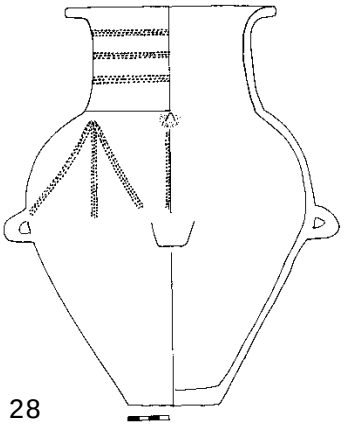
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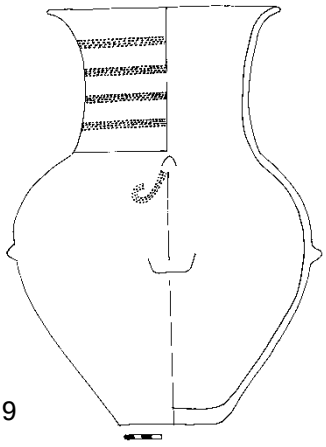
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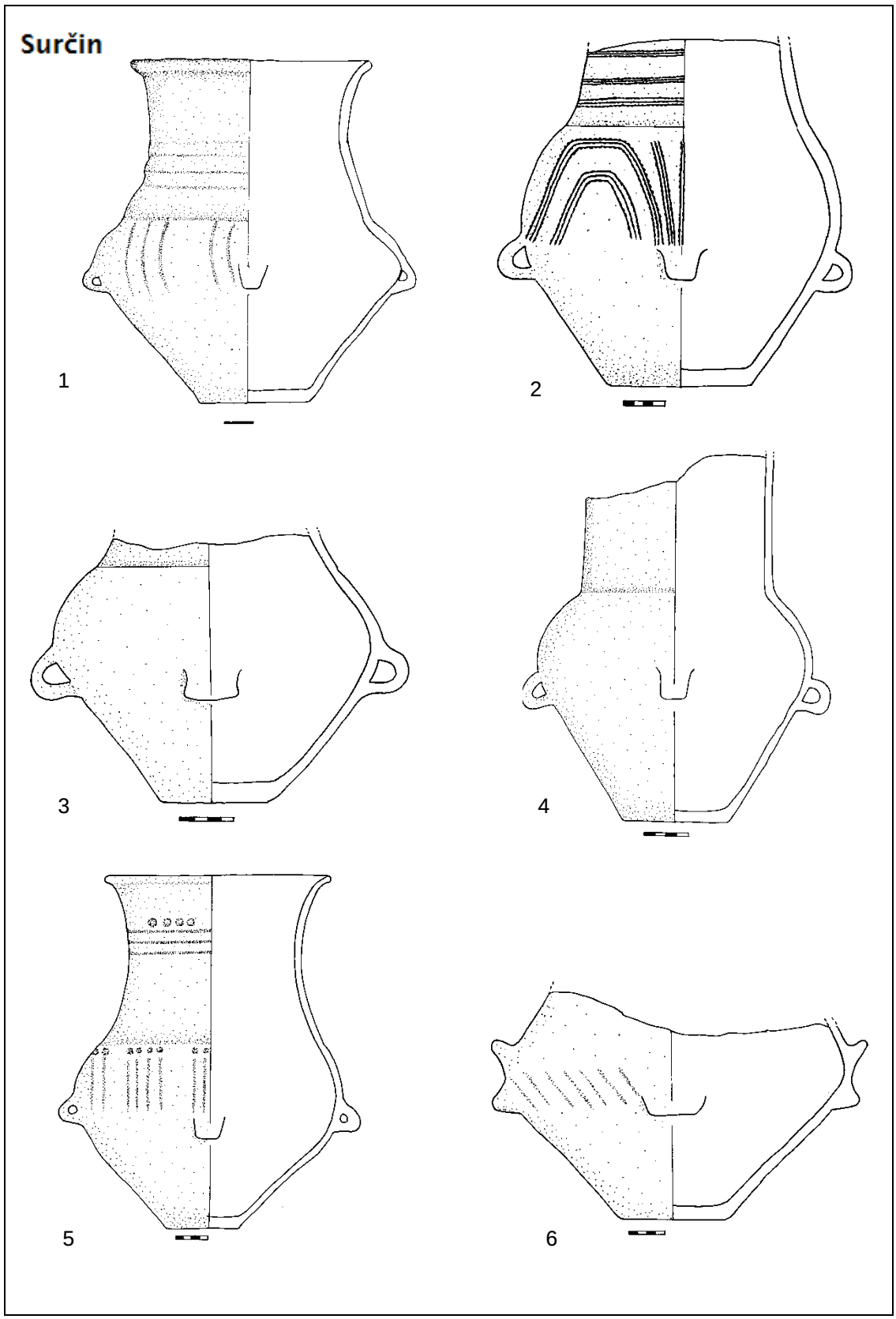


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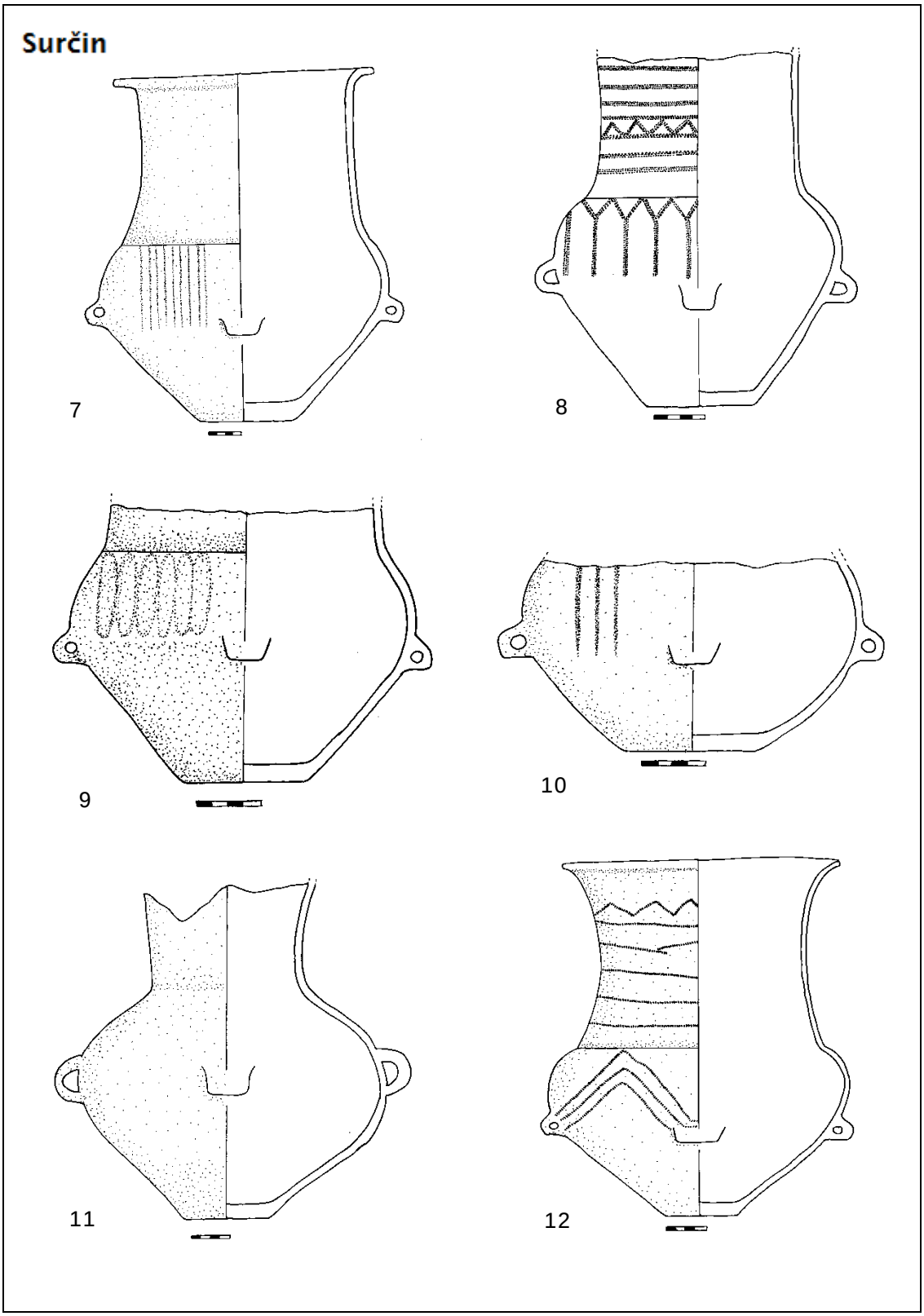


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Vessels from Vršac Museum, Vršac 25- 10899, 26- 11384.
27- 10545, 28- 10985, 29- 27626.

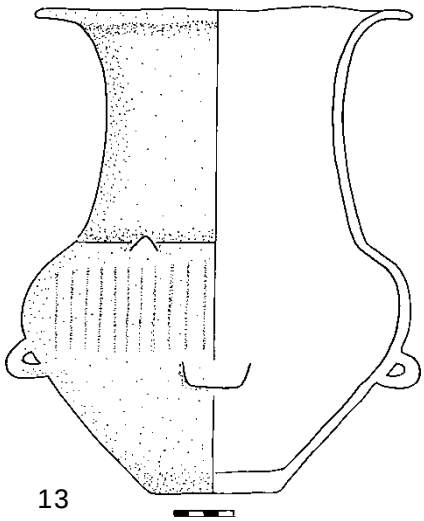


Vessels from Archaeological Museum, Zagreb. 1- 17320, 2- 20683, 3- 20685, 4- 20686, 5- 20687, 6- 20688.

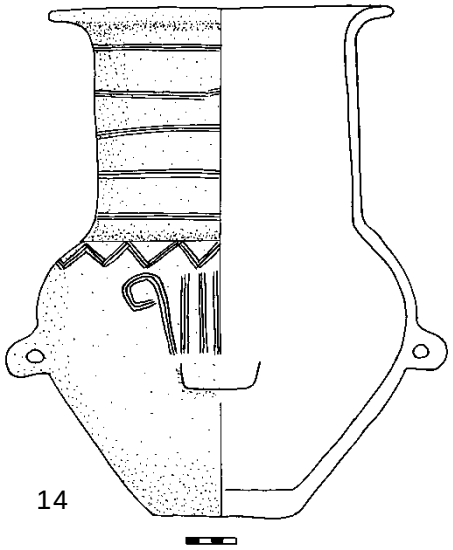


Vessels from Archaeological Museum, Zagreb. 7- 20689, 8- 20690, 9- 20692, 10- 20693, 11- 20695, 12- 20698.

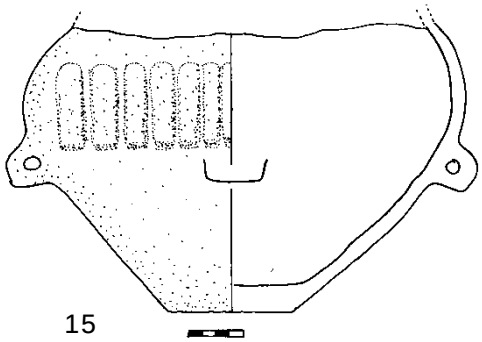
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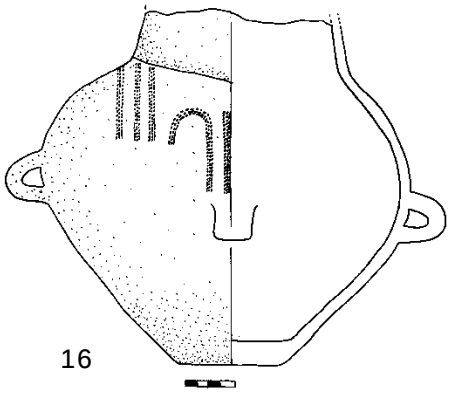
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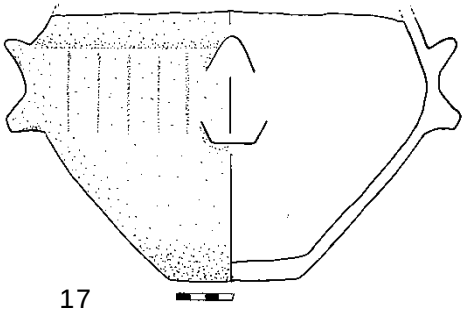
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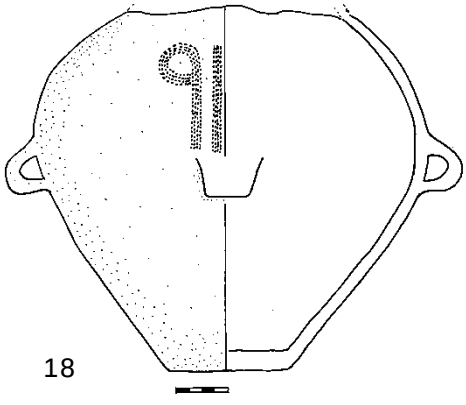
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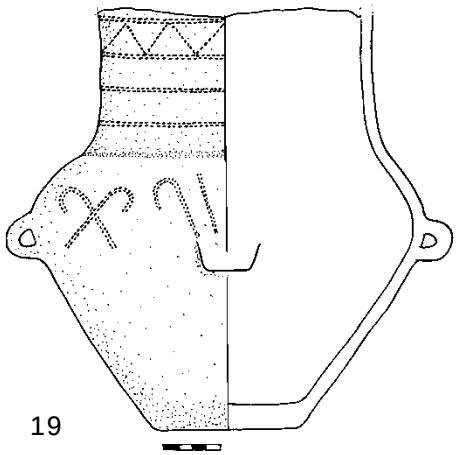
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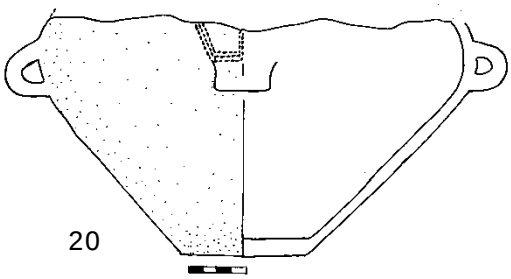
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Vessels from Archaeological Museum, Zagreb. 13- 20699, 14- 20700, 15-20701, 16- 20702, 17-20703, 18- 20706.

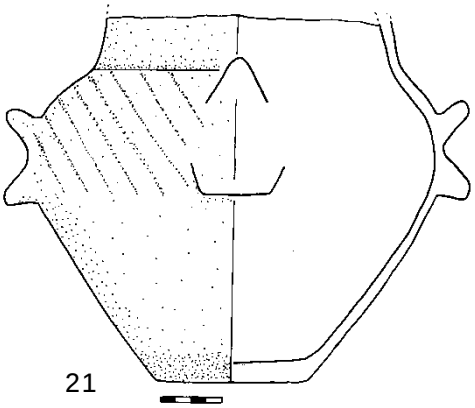
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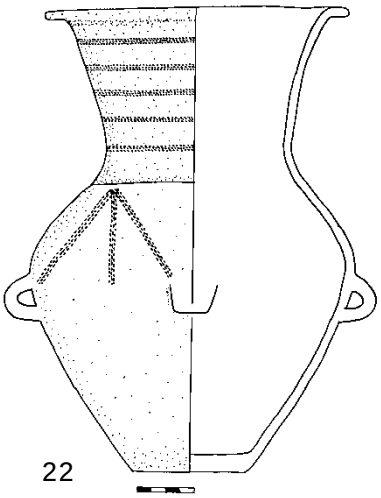
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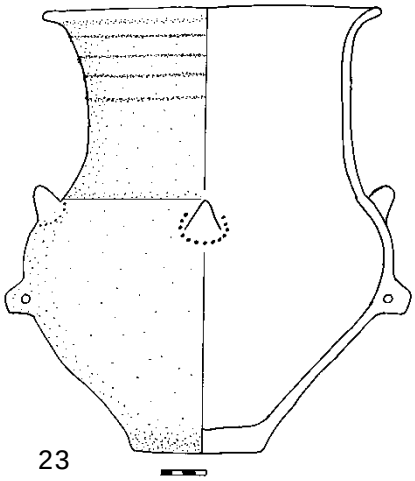
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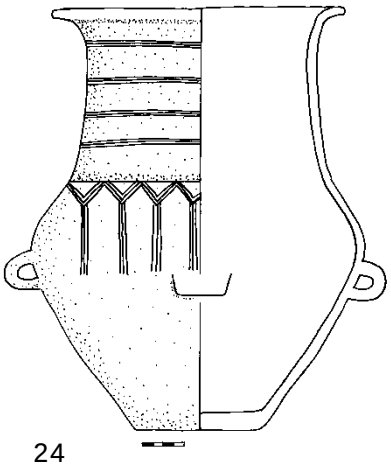
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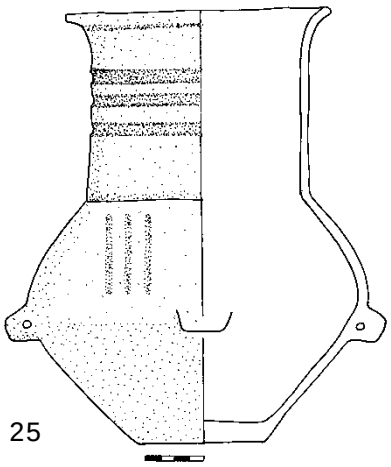
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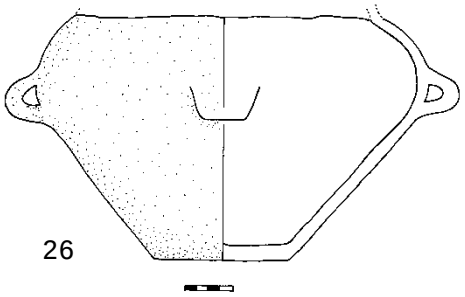
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Vessels from Archaeological Museum, Zagreb. 19- 20707, 20- 20708, 21- 20709, 22- 20710, 23- 20711, 24- 20712.

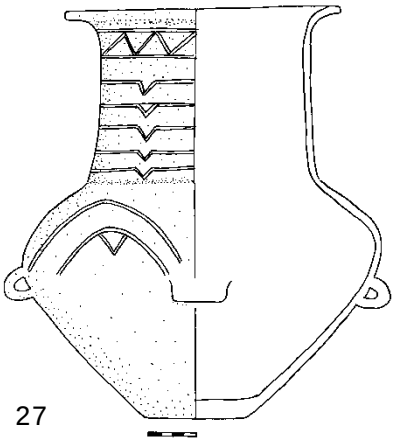
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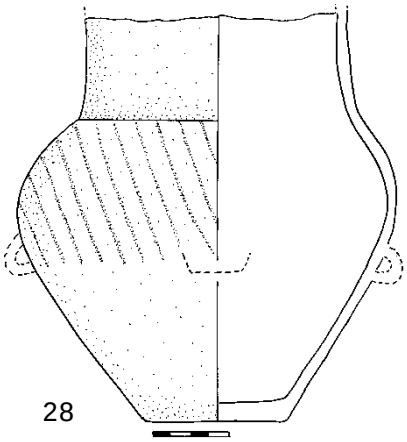
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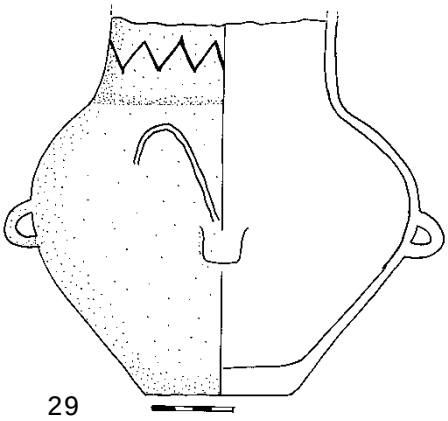
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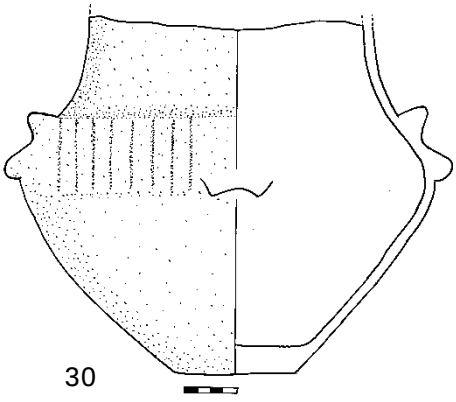
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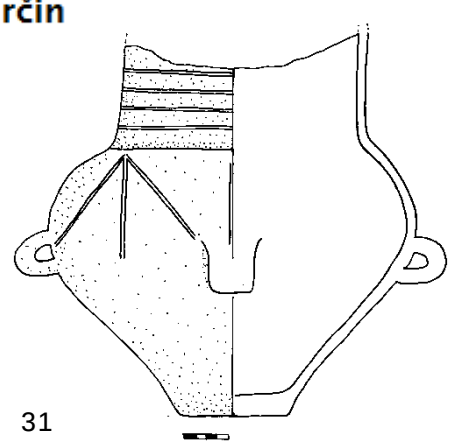
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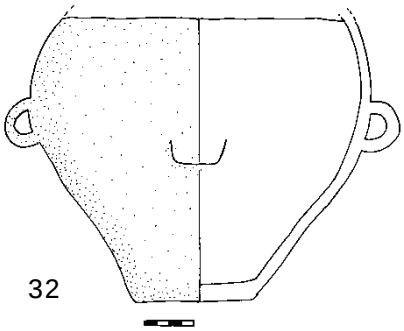
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Vessels from Archaeological Museum, Zagreb. 25- 20717, 26- 20719, 27- 20725, 28- 20726, 29- 20727, 30- 20728.

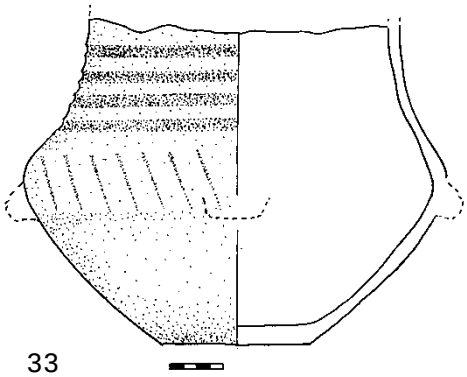
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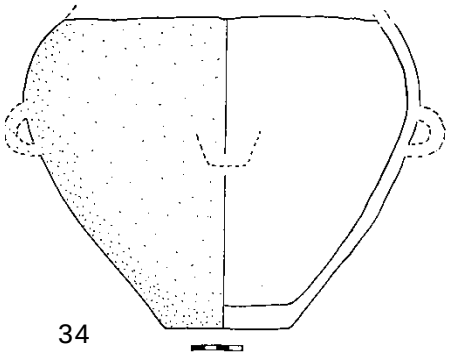
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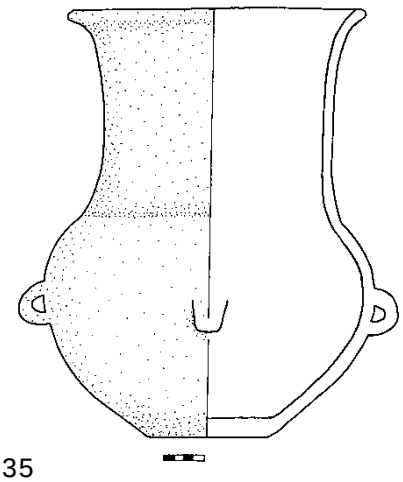
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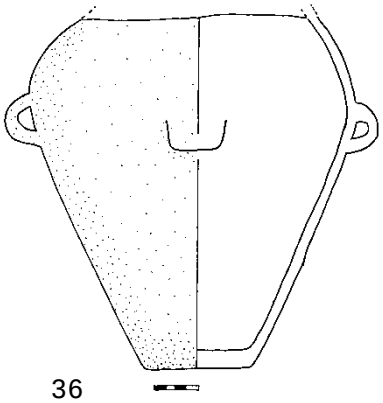
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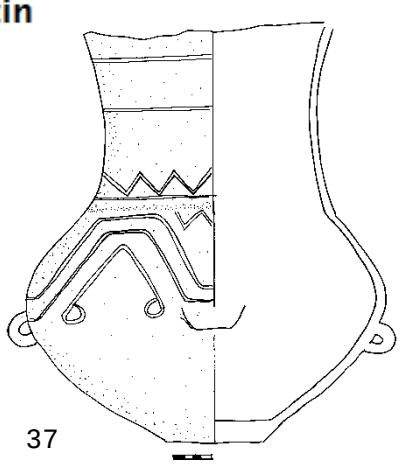
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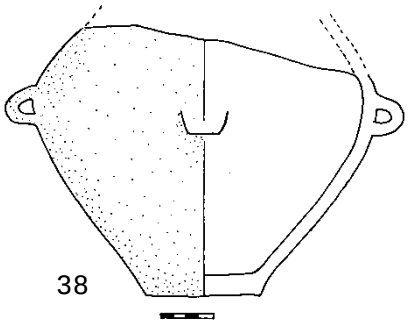
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Vessels from Archaeological Museum, Zagreb. 31- 20729, 32- 20731, 33- 20732, 34- 20755, 35- 20759, 36- 20763.

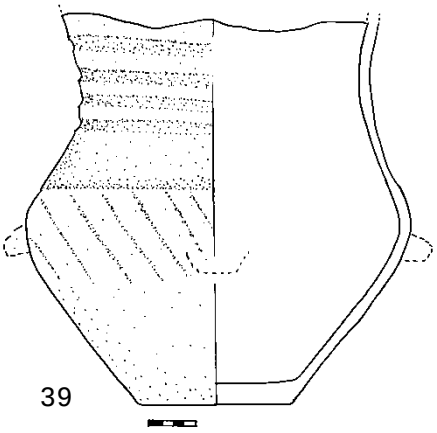
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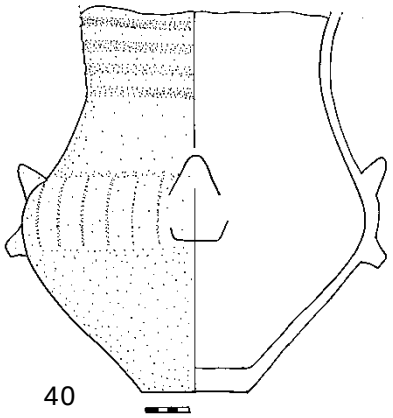
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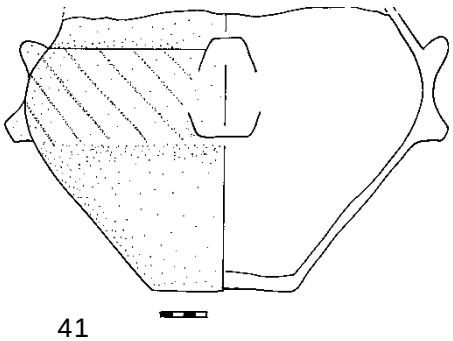
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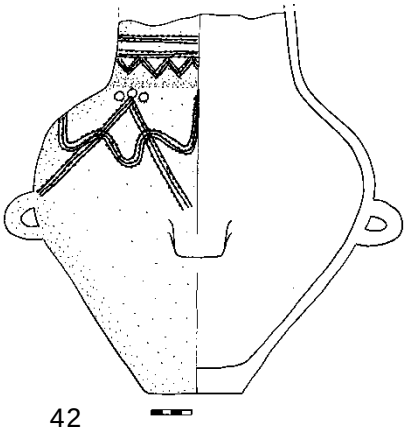
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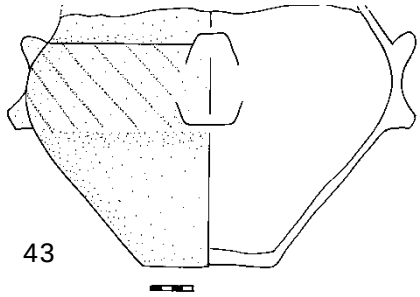
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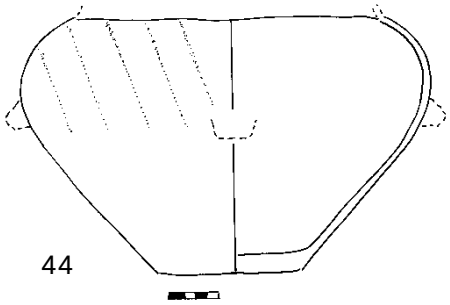
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Vessels from Archaeological Museum, Zagreb. 37- 20764, 38- 20766, 39- 20733, 40- 20734, 41- 20735, 42- 20736

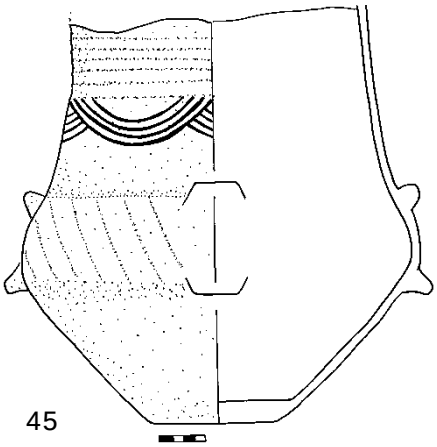
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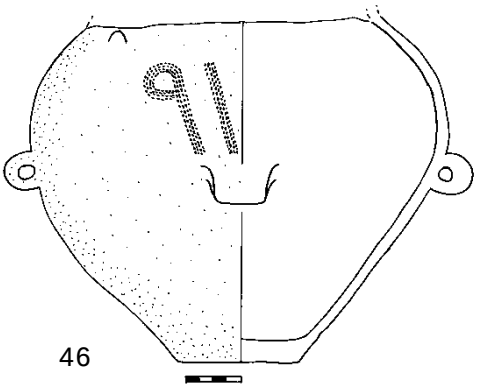
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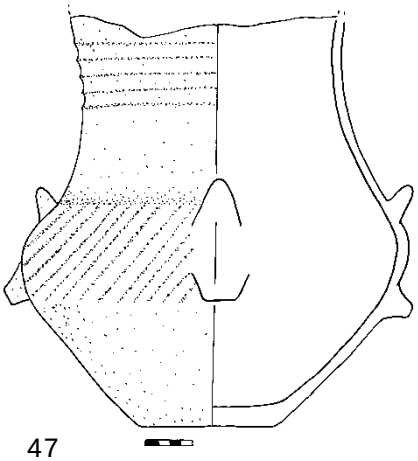
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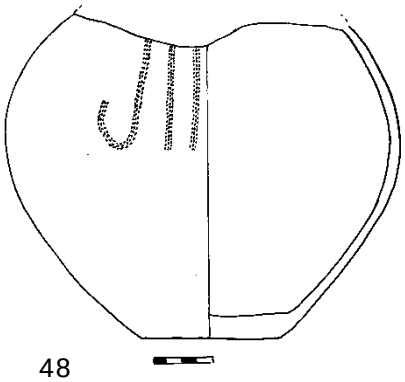
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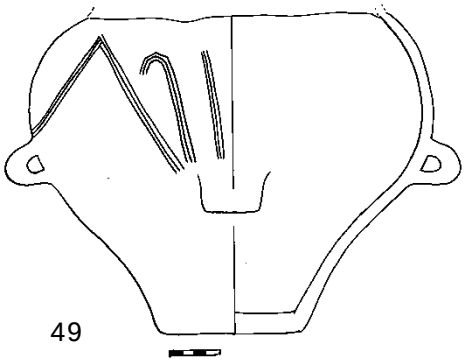
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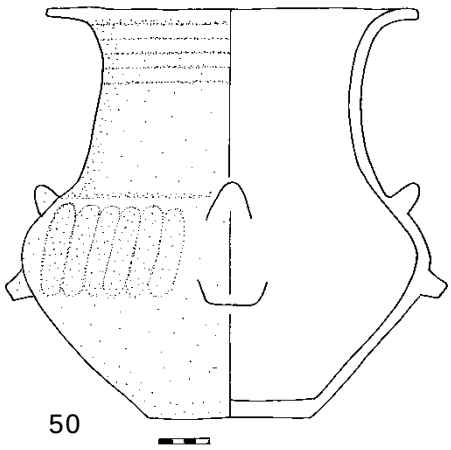
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Vessels from Archaeological Museum, Zagreb. 43- 20737, 44- 20739, 45- 20740, 46- 20742, 47- 20746, 48- 20747.

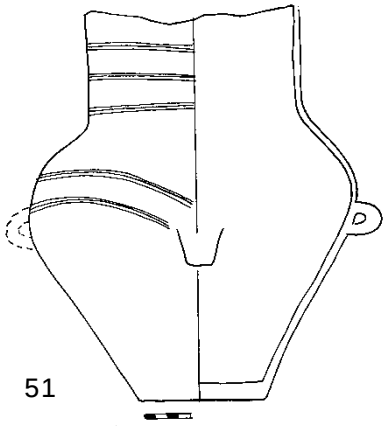
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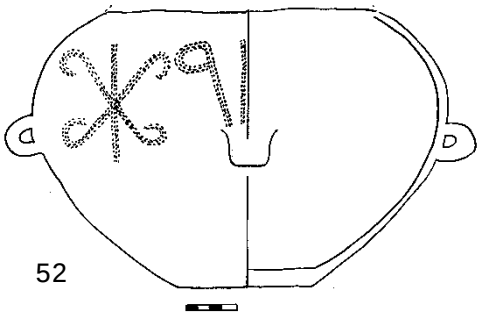
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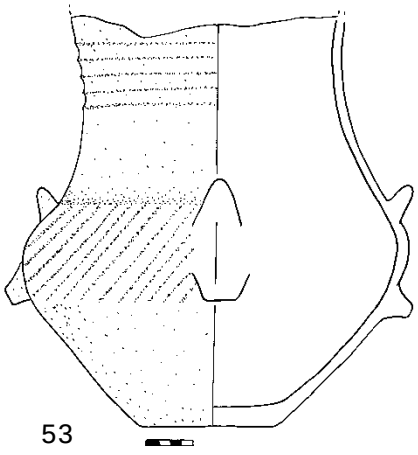
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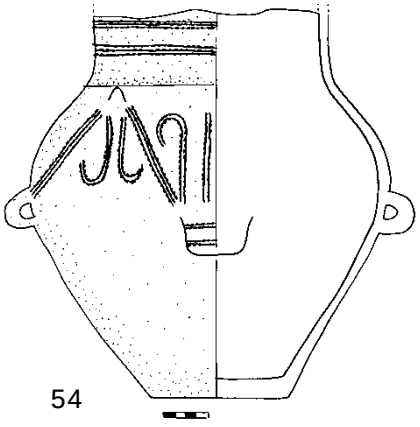
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52



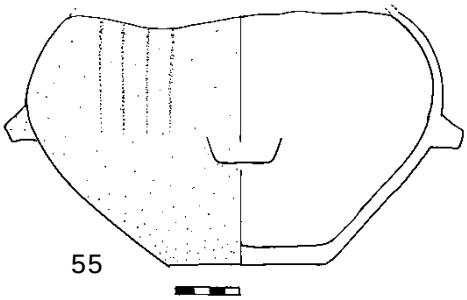
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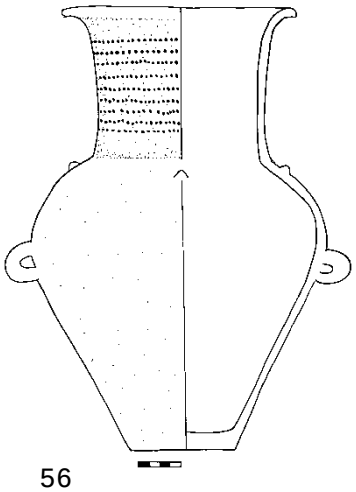
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Vessels from Archaeological Museum, Zagreb. 49- 20750, 50- 20752, 51- 20753, 52- 20754, 53- 20756, 54- 20757.

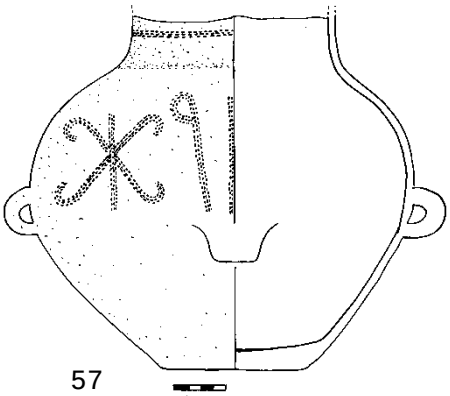
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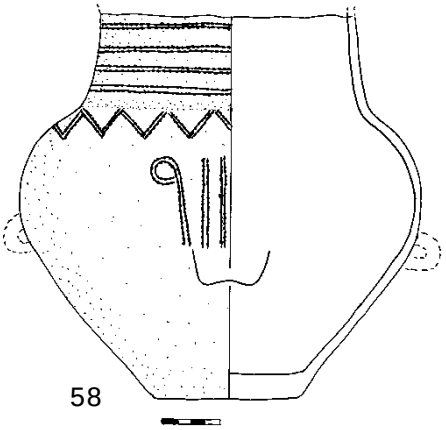
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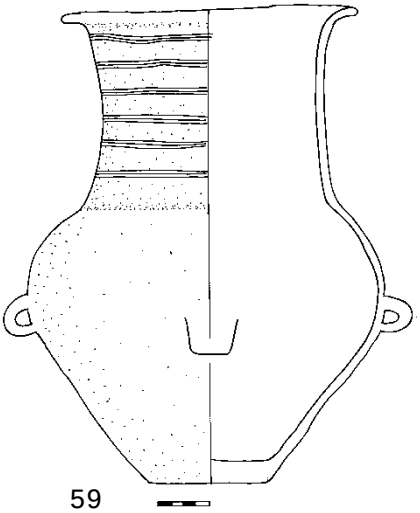
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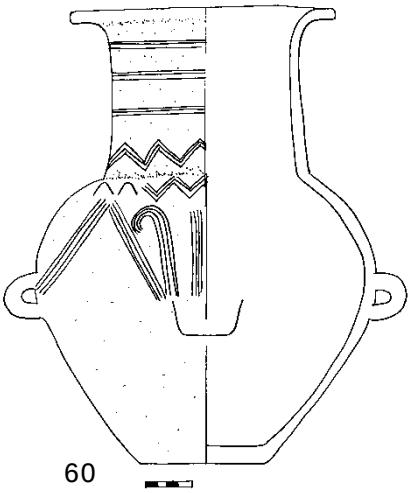
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58



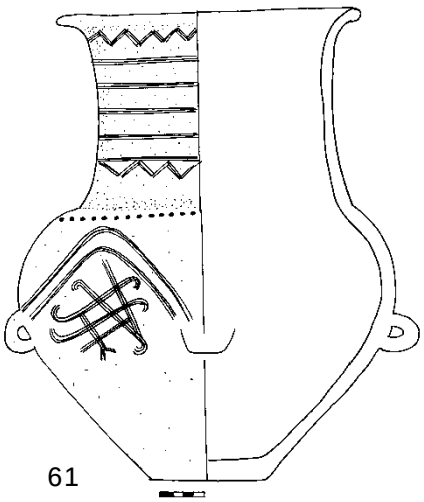
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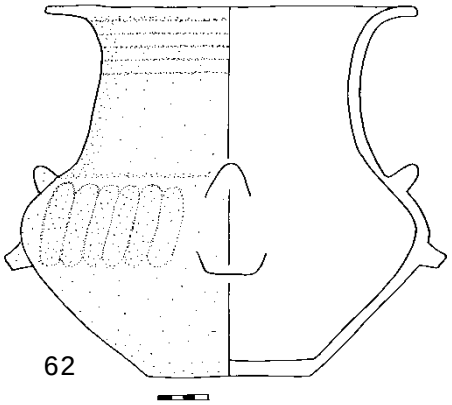
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Vessels from Archaeological Museum, Zagreb. 55- 20758, 56- 20760, 57- 20762, 58- 20767, 59- 20768, 60- 20769.

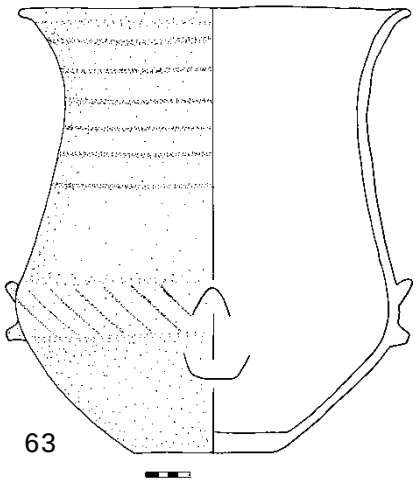
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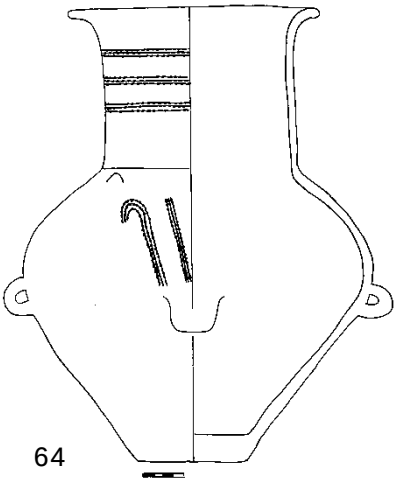
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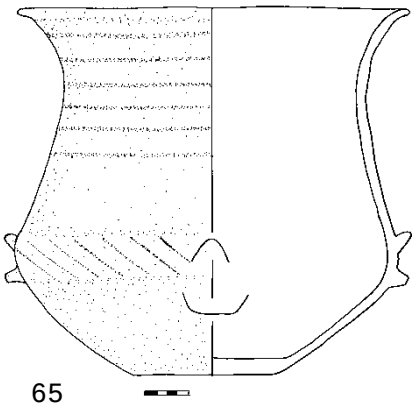
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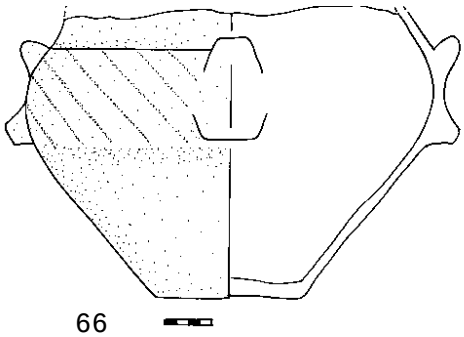
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64



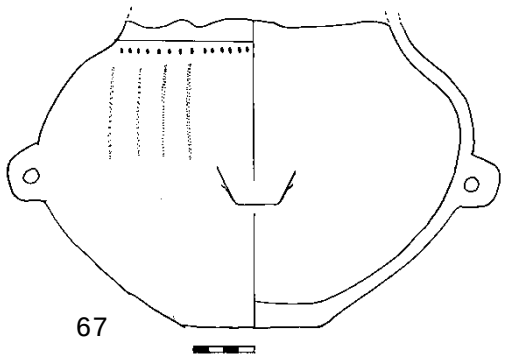
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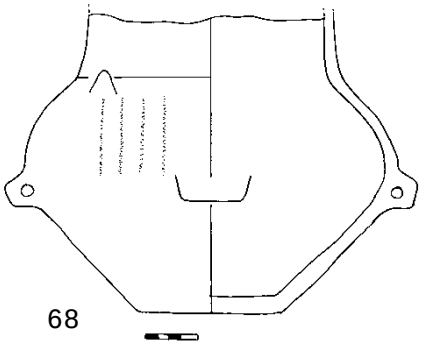
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Vessels from Archaeological Museum, Zagreb. 61- 20771, 62- 20883, 63- 20884, 64- 20885, 65- 20886, 66- 20887.

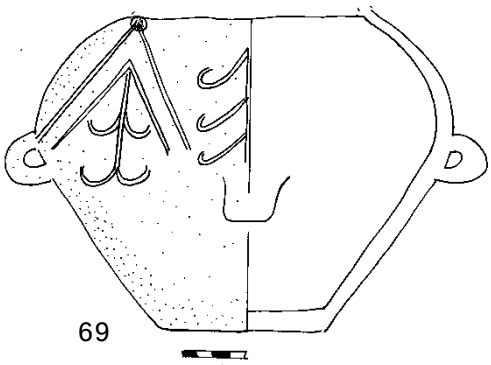
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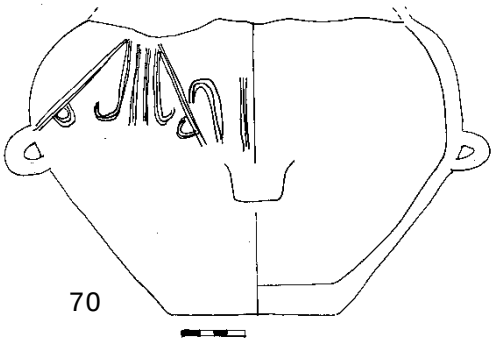
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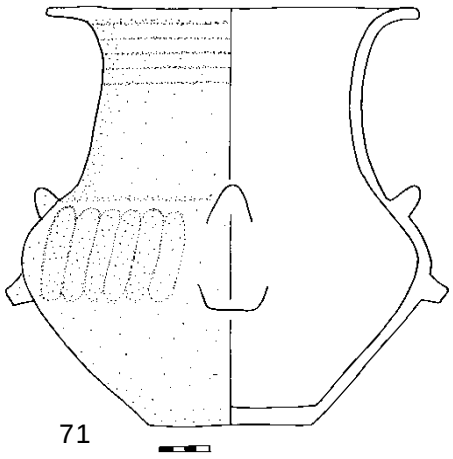
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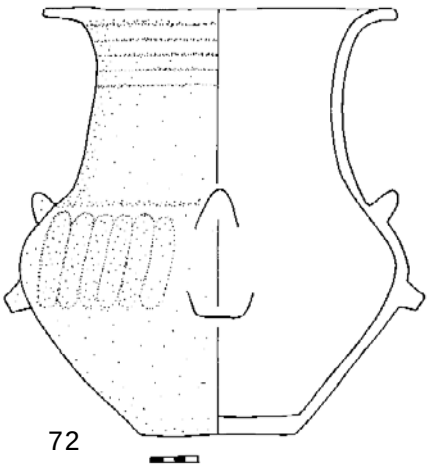
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Vessels from Archaeological Museum, Zagreb. 67- 20888, 68- 20889, 69- 20890, 70- 20891, 71- 20892, 72- 20893.

Appendix II
Classifications and Frequencies

II.I Fabrics

Fabric Codes

Gr1	Gr2	Gr3	Gr4
			

Belegiš I Fabric Frequencies

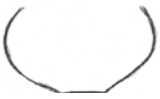
Count	**Gr1**	**Gr2**	**Gr3**	**Gr4**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	2	0	2	0	4
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	1	3	1	5
Surčin	16	4	6	3	29
Tolvadia	0	1	0	0	1
Vatin	4	0	1	1	6
Vršac – S. Ludoš	2	0	1	0	3
Percentage	**Gr1**	**Gr2**	**Gr3**	**Gr4**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	50%	0%	50%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	20%	60%	20%	100%
Surčin	55.5%	13.8%	20.7%	10.4%	100%
Tolvadia	0%	100%	0%	0%	100%
Vatin	66.7%	0%	16.6%	16.6%	100%
Vršac – S. Ludoš	66.7%	0%	33.3%	0%	100%

Belegiš II Fabric Frequencies

Count	**Gr1**	**Gr2**	**Gr3**	**Gr4**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0	0	0	0	0
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	0	0	0	0
Surčin	2	3	9	2	16
Tolvadia	0	0	0	0	0
Vatin	1	1	0	0	2
Vršac – S. Ludoš	0	1	1	0	2
Percentage	**Gr1**	**Gr2**	**Gr3**	**Gr4**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	0%	0%	0%	0%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	0%	0%	0%	0%
Surčin	12.5%	18.8%	56.3%	12.5%	100%
Tolvadia	0%	0%	0%	0%	0%
Vatin	50%	50%	0%	0%	100%
Vršac – S. Ludoš	0%	50%	50%	0%	100%

II.II Shape

Shape Codes

Rim	**R1**  Slightly everted. Flat edge.	**R2**  Fully everted. Flat edge.	**R3**  Slightly everted. Rolled edge	**R4**  Straight and rolled	
Neck	**N1**  Thin and cylindrical.	**N2**  Thick and cylindrical	**N3**  Thick and slightly tapered	**N4**  Thick and fully tapered	**N5**  Thin and funnel shaped
Neck/ Shoulder	**NS1**  Distinct	**NS2**  Semi-distinct	**NS3**  Merged		
Handle	**H1**  Tunnel	**H2**  Pinched	**H3**  Lug	**H4**  Pierced Lug	
Belly	**B1**  Fully-rounded	**B2**  Semi-rounded	**B3**  Angular		
Squatness	**Elongated**  Extended bottom/ base	**Medium**  Medium bottom/ base	**Squat**  Short bottom/ base		

Belegiš I Rim Frequencies

Count	**R1**	**R2**	**R3**	**R4**	**Total**
Belegis –S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	5	1	1	0	7
Kaluđerske Livade	9	4	1	0	14
Karaburma	27	24	0	0	50
Stubarlija	4	2	5	1	12
Surčin	4	7	1	0	12
Tolvadia	5	1	0	0	6
Vatin	4	5	1	2	12
Vršac – S. Ludoš	6	4	1	0	11
Percentage	**R1**	**R2**	**R3**	**R4**	**Total**
Belegiš - S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	71.4%	14.3%	14.3%	0%	100%
Vatin	33.3%	41.7%	8.3%	16.7%	100%
Kaluđerske Livade	64.3%	28.6%	7.1%	0%	100%
Karaburma	54%	46%	0%	0%	100%
Stubarlija	33.3%	16.7%	41.7%	8.3%	100%
Surčin	33.3%	58.3%	8.4%	0%	100%
Tolvadia	83.3%	16.7%	0%	0%	100%
Vršac – S. Ludoš	54.5%	36.4%	9.1%	0%	100%

Belegiš II Rim Frequencies

Count	**R1**	**R2**	**R3**	**R4**	**Total**
Belegiš - S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	0	3	2	0	5
Karaburma	2	14	0	0	16
Stubarlija	0	3	1	0	4
Surčin	2	6	3	0	11
Tolvadia	1	0	0	0	1
Vatin	2	1	0	0	3
Vršac – S. Ludoš	3	1	0	0	4
Percentage	**R1**	**R2**	**R3**	**R4**	**Total**
Belegiš - S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	0%	60%	40%	0%	100%
Karaburma	12.5%	87.5%	0%	0%	100%
Stubarlija	0%	75%	25%	0%	100%
Surčin	18.2%	54.5%	27.3%	0%	100%
Tolvadia	100%	0%	0%	0%	100%
Vatin	66.7%	33.3%	0%	0%	100%
Vršac – S. Ludoš	75%	25%	0%	0%	100%

Belegiš I Neck Frequencies

Count	N1	N2	N3	N4	N5	Total
Belegiš - S. Gumno	26	17	0	0	0	43
Ilandža	2	1	4	0	0	7
Kaluđerske Livade	15	2	2	1	0	20
Karaburma	34	43	7	0	0	84
Stubarlija	1	9	0	0	2	12
Surčin	23	5	0	0	0	28
Tolvadia	1	1	4	0	0	6
Vatin	9	9	2	0	0	20
Vršac – S. Ludoš	12	8	0	0	0	20
Percentage	**N1**	**N2**	**N3**	**N4**	**N5**	**Total**
Belegiš - S. Gumno	60.5%	39.5%	0%	0%	0%	100%
Ilandža	28.6%	14.3%	57.1%	0%	0%	100%
Kaluđerske Livade	75%	10%	10%	5%	0%	100%
Karaburma	40.5%	51.2%	8.4%	0%	0%	100%
Stubarlija	8.3%	75%	0%	0%	16.7%	100%
Surčin	82.1%	17.9%	0%	0%	0%	100%
Tolvadia	16.7%	16.7%	66.6%	0%	0%	100%
Vatin	45%	45%	10%	0%	0%	100%
Vršac – S. Ludoš	60%	40%	0%	0%	0%	100%

Belegiš II Neck Frequencies

Count	N1	N2	N3	N4	N5	Total
Belegiš - S. Gumno	0	5	17	3	0	25
Ilandža	0	0	0	0	0	0
Kaluđerske Livade	1	2	3	1	0	7
Karaburma	1	5	10	10	0	26
Stubarlija	0	2	2	2	0	6
Surčin	1	3	9	14	0	27
Tolvadia	0	2	0	0	0	2
Vatin	0	0	2	3	0	5
Vršac – S. Ludoš	2	3	4	1	0	11
Percentage	**N1**	**N2**	**N3**	**N4**	**N5**	**Total**
Belegiš - S. Gumno	0%	20%	68%	12%	0%	100%
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	14.3%	28.6%	42.8%	14.3%	0%	100%
Karaburma	3.8%	19.2%	38.5%	38.5%	0%	100%
Stubarlija	0%	33.3%	33.3%	33.3%	0%	100%
Surčin	3.7%	11.1%	33.3%	51.9%	0%	100%
Tolvadia	0%	100%	0%	0%	0%	100%
Vatin	0%	0%	40%	60%	0%	100%
Vršac – S. Ludoš	18.2%	27.3%	36.4%	9.1%	0%	100%

Belegiš I Neck/ Shoulder Frequencies

Count	**NS1**	**NS2**	**NS3**	**Total**
Belegiš - S. Gumno	46	3	0	49
Ilandža	2	5	0	7
Kaluđerske Livade	23	2	0	25
Karaburma	75	11	0	86
Stubarlija	10	2	0	12
Surčin	26	2	0	28
Tolvadia	1	5	0	6
Vatin	8	11	0	19
Vršac – S. Ludoš	13	7	0	20
Percentage	**NS1**	**NS2**	**NS3**	**Total**
Belegiš - S. Gumno	93.9%	6.1%	0%	100%
Ilandža	28.6%	71.4%	0%	100%
Kaluđerske Livade	92%	8%	0%	100%
Karaburma	87.2%	12.8%	0%	100%
Stubarlija	83.3%	16.7%	0%	100%
Surčin	92.9%	7.1%	0%	100%
Tolvadia	16.7%	83.3%	0%	100%
Vatin	42.1%	57.9%	0%	100%
Vršac – S. Ludoš	65%	35%	0%	100%

Belegiš II Neck/ Shoulder Frequencies

Count	**NS1**	**NS2**	**NS3**	**Total**
Belegiš - S. Gumno	1	20	4	25
Ilandža	0	0	0	0
Kaluđerske Livade	0	5	1	6
Karaburma	3	11	11	25
Stubarlija	0	3	3	6
Surčin	1	13	13	27
Tolvadia	0	2	0	2
Vatin	0	2	4	6
Vršac – S. Ludoš	0	6	3	9
Percentage	**NS1**	**NS2**	**NS3**	**Total**
Belegiš - S. Gumno	4%	80%	16%	100%
Ilandža	N/A	N/A	N/A	N/A
Kaluđerske Livade	0%	83.4%	16.6%	100%
Karaburma	12%	44%	44%	100%
Stubarlija	0%	50%	50%	100%
Surčin	3.8%	48.1%	48.1%	100%
Tolvadia	0%	100%	0%	100%
Vatin	0%	33.3%	66.7%	100%
Vršac – S. Ludoš	0%	66.7%	33.3%	100%

Belegiš I Handle Frequencies

Count	**H1**	**H2**	**H3**	**H4**	**Total**
Belegiš -S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	3	4	0	0	7
Kaluđerske Livade	20	12	0	0	32
Karaburma	18	67	2	1	88
Stubarlija	11	2	0	0	13
Surčin	36	5	0	0	41
Tolvadia	2	4	0	0	6
Vatin	7	12	0	0	19
Vršac – S. Ludoš	13	7	0	0	20
Percentage	**H1**	**H2**	**H3**	**H4**	**Total**
Belegiš -S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	42.9%	57.1%	0%	0%	100%
Kaluđerske Livade	62.5%	37.5%	0%	0%	100%
Karaburma	20.5%	67.1%	2.3%	1.1%	100%
Stubarlija	84.6%	15.4%	0%	0%	100%
Surčin	87.8%	12.2%	0%	0%	100%
Tolvadia	33.3%	66.7%	0%	0%	100%
Vatin	36.8%	63.2%	0%	0%	100%
Vršac – S. Ludoš	65%	35%	0%	0%	100%

Belegiš II Handle Frequencies

Count	**H1**	**H2**	**H3**	**H4**	**Total**
Belegiš - S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0	0	0	0	0
Kaluđerske Livade	0	0	0	7	7
Karaburma	0	4	18	2	24
Stubarlija	0	3	1	0	4
Surčin	0	9	14	3	26
Tolvadia	0	1	1	0	2
Vatin	0	1	3	2	6
Vršac – S. Ludoš	0	6	3	0	9
Percentage	**H1**	**H2**	**H3**	**H4**	**Total**
Belegiš -S. Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	0%	0%	0%	0%
Kaluđerske Livade	0%	0%	0%	100%	100%
Karaburma	0%	16.7%	75%	8.3%	100%
Stubarlija	0%	75%	25%	0%	100%
Surčin	0%	34.6%	53.8%	11.6%	100%
Tolvadia	0%	50%	50%	0%	100%
Vatin	0%	16.7%	50%	33.3%	100%
Vršac – S. Ludoš	0%	66.7%	33.3%	0%	100%

Belegiš I Belly Frequencies

Count	**B1**	**B2**	**B3**	**Total**
Belegiš -S. Gumno	24	40	4	68
Ilandža	2	5	0	7
Kaluđerske Livade	24	15	0	39
Karaburma	57	31	0	88
Stubarlija	10	5	0	15
Surčin	28	12	1	41
Tolvadia	3	2	1	6
Vatin	10	7	2	19
Vršac – S. Ludoš	12	6	2	20
Percentage	**B1**	**B2**	**B3**	**Total**
Belegiš -S. Gumno	35.3%	58.8%	5.9%	100%
Ilandža	28.6%	71.4%	0%	100%
Kaluđerske Livade	61.5%	38.5%	0%	100%
Karaburma	64.8%	35.2%	0%	100%
Stubarlija	66.7%	33.3%	0%	100%
Surčin	68.2%	29.3%	2.4%	100%
Tolvadia	50%	33.3%	16.7%	100%
Vatin	52.6%	36.8%	10.6%	100%
Vršac – S. Ludoš	60%	30%	10%	100%

Belegiš II Belly Frequencies

Count	**B1**	**B2**	**B3**	**Total**
Belegiš -S. Gumno	6	19	3	28
Ilandža	0	0	0	0
Kaluđerske Livade	1	5	2	8
Karaburma	3	17	12	32
Stubarlija	2	3	0	5
Surčin		15	8	31
Tolvadia	0	1	1	2
Vatin	0	2	4	6
Vršac – S. Ludoš	0	7	2	9
Percentage	**B1**	**B2**	**B3**	**Total**
Belegiš -S. Gumno	21.4%	67.9%	10.7%	100%
Ilandža	N/A	N/A	N/A	N/A
Kaluđerske Livade	12.5%	62.5%	25%	100%
Karaburma	9.1%	51.5%	36.4%	100%
Stubarlija	40%	60%	0%	100%
Surčin	25.8%	48.4%	25.8%	100%
Tolvadia	0%	50%	50%	100%
Vatin	0%	33.3%	66.7%	100%
Vršac – S. Ludoš	0%	77.7%	22.3%	100%

Belegiš I Lower Body Squatness Frequencies

Count	Elongated	Medium	Squat	Total
Belegiš -S. Gumno	12	48	8	68
Ilandža	1	5	1	7
Kaluđerske Livade	9	26	4	39
Karaburma	7	66	15	88
Stubarlija	0	11	3	14
Surčin	4	35	2	41
Tolvadia	2	3	1	6
Vatin	3	13	3	19
Vršac – S. Ludoš	3	14	3	20
Percentage	**Elongated**	**Medium**	**Squat**	**Total**
Belegiš -S. Gumno	17.6%	70.6%	11.8%	100%
Ilandža	14.3%	71.4%	14.3%	100%
Kaluđerske Livade	23.1%	66.7%	10.2%	100%
Karaburma	8.0%	75%	17%	100%
Stubarlija	0%	78.6%	21.4%	100%
Surčin	9.8%	85.4%	4.8%	100%
Tolvadia	33.3%	50%	16.7%	100%
Vatin	15.8%	68.4%	15.8%	100%
Vršac – S. Ludoš	15%	70%	15%	100%

Belegiš II Lower Body Squatness Frequencies

Count	Elongated	Medium	Squat	Total
Belegiš -S. Gumno	0	24	4	28
Ilandža	0	0	0	0
Kaluđerske Livade	0	5	3	8
Karaburma	3	25	4	32
Stubarlija	0	4	2	6
Surčin	2	24	5	31
Tolvadia	0	1	1	2
Vatin	0	5	1	6
Vršac – S. Ludoš	0	3	6	9
Percentage	**Elongated**	**Medium**	**Squat**	**Total**
Belegiš -S. Gumno	0%	85.7%	14.3%	100%
Ilandža	N/A	N/A	N/A	N/A
Karaburma	9.4%	75%	15.6%	100%
Kaluđerske Livade	0%	62.5%	37.5%	100%
Stubarlija	0%	66.7%	33.3%	100%
Surčin	6.5%	77.4%	16.1%	100%
Tolvadia	0%	50%	50%	100%
Vatin	0%	83.3%	16.7%	100%
Vršac – S. Ludoš	0%	33.3%	66.7%	100%

Belegiš I Form Frequencies

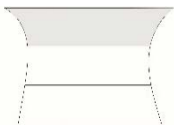
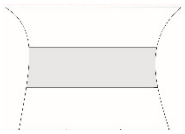
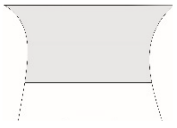
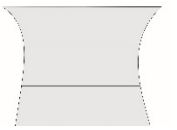
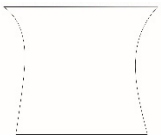
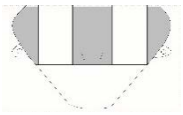
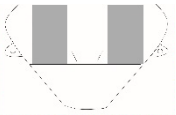
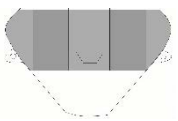
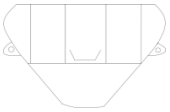
Count	**Quadripartite**	**Tripartite**	**Bipartite**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A
Ilandža	0	6	1	7
Kaluđerske Livade	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A
Stubarlija	0	17	0	17
Surčin	0	41	0	41
Tolvadia	0	6	0	6
Vatin	1	17	0	18
Vršac – S. Ludoš	0	22	0	22
Percentage	**Quadripartite**	**Tripartite**	**Bipartite**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A
Ilandža	0%	86%	14%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A
Stubarlija	0%	100%	0%	100%
Surčin	0%	100%	0%	100%
Tolvadia	0%	100%	0%	100%
Vatin	6%	94%	0%	100%
Vršac – S. Ludoš	0%	100%	0%	100%

Belegiš II Form Frequencies

Count	**Quadripartite**	**Tripartite**	**Bipartite**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A
Ilandža	0	0	0	0
Kaluđerske Livade	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A
Stubarlija	0	2	2	4
Surčin	1	5	25	31
Tolvadia	0	2	0	2
Vatin	0	2	5	7
Vršac – S. Ludoš	0	4	3	7
Percentage	**Quadripartite**	**Tripartite**	**Bipartite**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A
Stubarlija	0%	50%	50%	100%
Surčin	3%	16%	81%	100%
Tolvadia	0%	100%	0%	100%
Vatin	0%	29%	71%	100%
Vršac – S. Ludoš	0%	57%	43%	100%

I.III Decorative Layout

Layout Codes

Neck	**SL1A**  Zone 1A	**SL1B**  Zone 1B	**SL1AB**  Zones 1A and 1B	**SL1ABC**  Zones 1A, 1B and 1C	**SL1- 0**  No Zones
Shoulder	**SL2A**  Zones 2A	**SL2B**  Zones 2B	**SL2AB1**  Zones 2A and 2B (same motif in both zones)	**SL2AB2**  Zones 2A and 2B (different motifs in both zones)	**SL2- 0**  No Zones
Belly	**SL3A**  Zones 3A	**SL3B**  Zones 3B	**SL3AB1**  Zones 3A and 3B (same motif in both zones)	**SL3AB2**  Zones 3A and 3B (different motifs in both zones)	**SL3- 0**  No Zones

Belegiš I Neck Layout Frequencies

Count	**SL1A**	**SL1B**	**SL1AB**	**SL1ABC**	**SL1- 0**	**Total**
Belegiš -S. Gumno	0	3	0	36	9	48
Ilandža	0	0	0	5	2	7
Kaluđerski Livade	0	1	0	11	2	14
Karaburma	0	8	0	51	15	74
Stubarlija	0	0	1	4	11	16
Surčin	0	1	1	13	0	15
Tolvadia	0	0	0	6	0	6
Vatin	2	2	0	3	6	13
Vršac – S. Ludoš	2	4	1	1	7	15
Percentage	**SL1A**	**SL1B**	**SL1AB**	**SL1ABC**	**SL1- 0**	**Total**
Belegiš -S. Gumno	0%	6.3%	0%	75%	18.8%	100%
Ilandža	0%	0%	0%	71.4%	28.6%	100%
Kaluđerske Livade	0%	7.1%	0%	78.6%	14.3%	100%
Karaburma	0%	10.8%	0%	68.9%	20.3%	100%
Stubarlija	0%	0%	6.3%	25%	68.7%	100%
Tolvadia	0%	0%	0%	100%	0%	100%
Surčin	0%	6.7%	6.7%	86.6%	0%	100%
Vatin	15.4%	15.4%	0%	23.1%	46.2%	100%
Vršac – S. Ludoš	13.3%	26.6%	6.7%	6.7%	46.7%	100%

Belegiš II Neck Layout Frequencies

Count	SL1A	SL1B	SL1AB	SL1ABC	SL1- 0	Total
Belegiš -S. Gumno	10	6	1	2	1	20
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	3	1	0	1	1	6
Karaburma	9	2	1	4	3	19
Stubarlija	0	3	1	0	0	4
Surčin	13	2	2	1	4	22
Tolvadia	1	0	0	0	0	1
Vatin	4	1	0	0	1	6
Vršac – S. Ludoš	2	0	0	0	3	5
Percentage	**SL1A**	**SL1B**	**SL1AB**	**SL1ABC**	**SL1- 0**	**Total**
Belegiš -S. Gumno	50%	30%	5%	10%	5%	100%
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	50%	16.7%	0%	16.7%	16.7%	100%
Karaburma	47.4%	10.5%	5.3%	21.1%	15.8%	100%
Stubarlija	0%	75%	25%	0%	0%	100%
Surčin	59.1%	9.1%	9.1%	4.5%	18.2%	100%
Tolvadia	100%	0%	0%	0%	0%	100%
Vatin	66.6%	16.7%	0%	0%	16.7%	100%
Vršac – S. Ludoš	40%	0%	0%	0%	60%	100%

Belegiš I Shoulder Layout Frequencies

Count	SL2A	SL2B	SL2AB1	SL2AB2	SL2- 0	Total
Belegiš -S. Gumno	0	26	5	1	20	52
Ilandža	0	7	0	0	0	7
Kaluđerske Livade	1	3	1	1	13	19
Karaburma	3	30	8	7	35	84
Stubarlija	4	4	1	0	6	15
Surčin	1	10	7	3	12	33
Tolvadia	2	3	0	0	1	6
Vatin	5	3	0	4	6	18
Vršac – S. Ludoš	5	4	2	1	10	22
Percentage	**SL2A**	**SL2B**	**SL2AB1**	**SL2AB2**	**SL2- 0**	**Total**
Belegiš -S. Gumno	0%	50%	9.6%	1.9%	38.5%	100%
Ilandža	0%	100%	0%	0%	0%	100%
Kaluđerske Livade	5.3%	15.8%	5.3%	5.3%	68.4%	100%
Karaburma	3.6%	35.7%	9.5%	8.3%	41.7%	100%
Stubarlija	26.7%	26.7%	6.6%	0%	40%	100%
Surčin	3%	30.3%	21.2%	9.2%	36.3%	100%
Tolvadia	33.3%	50%	0%	0%	16.7%	100%
Vatin	27.8%	16.7%	0%	22.2%	33.3%	100%
Vršac – S. Ludoš	22.7%	18.2%	9.1%	4.5%	45.5%	100%

Belegiš II Shoulder Layout Frequencies

Count	SL2A	SL2B	SL2AB1	SL2AB2	SL2- 0	Total
Belegiš -S. Gumno	17	4	1	0	1	23
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	8	1	0	0	0	9
Karaburma	26	4	0	0	0	30
Stubarlija	6	0	0	0	0	6
Surčin	23	2	1	0	4	30
Tolvadia	1	0	0	1	0	2
Vatin	5	2	0	0	0	7
Vršac – S. Ludoš	7	0	0	0	0	7
Percentage	**SL2A**	**SL2B**	**SL2AB1**	**SL2AB2**	**SL2- 0**	**Total**
Belegiš -S. Gumno	73.9%	17.5%	4.3%	0%	4.3%	100%
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	88.9%	11.1%	0%	0%	0%	100%
Karaburma	86.7%	13.3%	0%	0%	0%	100%
Stubarlija	100%	0%	0%	0%	0%	100%
Surčin	76.6%	6.7%	3.3%	0%	13.3%	100%
Tolvadia	50%	0%	0%	50%	0%	100%
Vatin	71.4%	28.6%	0%	0%	0%	100%
Vršac – S. Ludoš	100%	0%	0%	0%	0%	100%

Belegiš I Belly Layout Frequencies

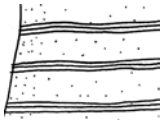
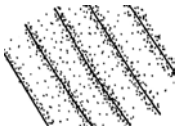
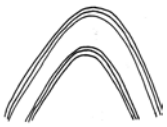
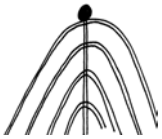
Count	SL3A	SL3B	SL3AB1	SL3AB2	SL3- 0	Total
Belegiš -S. Gumno	5	13	3	31	9	61
Ilandža	0	0	2	3	2	7
Kaluđerske Livade	3	1	1	11	3	19
Karaburma	3	19	8	36	17	83
Stubarlija	0	5	0	0	10	15
Surčin	2	4	5	23	2	36
Tolvadia	0	0	2	4	0	6
Vatin	2	1	2	3	10	18
Vršac – S. Ludoš	2	2	2	3	13	23
Percentage	**SL3A**	**SL3B**	**SL3AB1**	**SL3AB2**	**SL3- 0**	**Total**
Belegiš -S. Gumno	8.2%	21.3%	4.9%	50.9%	14.8%	100%
Ilandža	0%	0%	28.6%	42.8%	28.6%	100%
Kaluđerske Livade	15.8%	5.3%	5.3%	57.9%	15.8%	100%
Karaburma	3.6%	22.9%	9.6%	43.4%	20.5%	100%
Stubarlija	0%	33.3%	0%	0%	66.7%	100%
Surčin	5.6%	11.1%	13.8%	63.9%	5.6%	100%
Tolvadia	0%	0%	33.3%	66.7%	0%	100%
Vatin	11.1%	5.6%	11.1%	16.7%	55.6%	100%
Vršac – S. Ludoš	8.7%	8.7%	8.7%	13%	60.9%	100%

Belegiš II Belly Layout Frequencies

Count	SL3A	SL3B	SL3AB1	SL3AB2	SL3- 0	Total
Belegiš -S. Gumno	0	22	4	0	1	27
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	0	8	0	0	1	9
Karaburma	0	22	5	0	4	31
Stubarlija	0	4	0	0	2	6
Surčin	0	4	22	4	1	31
Tolvadia	0	1	1	0	0	2
Vatin	0	5	1	0	1	7
Vršac – S. Ludoš	0	1	2	0	4	7
Percentage	**SL3A**	**SL3B**	**SL3AB1**	**SL3AB2**	**SL3- 0**	**Total**
Belegiš -S. Gumno	0%	81.5%	14.8%	0%	3.7%	100%
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	0%	88.9%	0%	0%	11.1%	100%
Karaburma	0%	71%	16.1%	0%	12.9%	100%
Stubarlija	0%	66.7%	0%	0%	33.3%	100%
Surčin	0%	12.9%	71%	12.9%	3.2%	100%
Tolvadia	0%	50%	50%	0%	0%	100%
Vatin	0%	71.4%	14.3%	0%	14.3%	100%
Vršac – S. Ludoš	0%	14.3%	28.6%	0%	57.1%	100%

I.IV Decorative Motifs

Decorative Motif Codes

M1 – Horizontal Bands		M2 – Applied Bosses		
M1a  Horizontal Straight band	**M1b**  Horizontal Zigzag band	**M2a**  Small boss <10mm	**M2b**  Medium boss 10-15mm	**M2c**  Large boss >15mm
M3 - Dot		**M4 – Pseudo Handle**		
M3a  Medium dot <5mm	**M3b**  Large dot >5mm	**M4a**  Pseudo handle (angular)	**M4b**  Pseudo handle (rounded)	
M5 – Vertical Lines			**M6 – Multiple Stems with Curved Outer Stems**	
M5a  Vertical parallel lines	**M5b**  Diagonal parallel lines	**M5c**  Vertical Zigzag lines	**M6a**  Vertical stems curved at top	**M6b**  Vertical stems curved at top
M7 - Offshoots	**M8 - Cross**			
M7a  Single stem with multiple offshoots	**M8a**  Single Cross	**M8b**  Multiple Cross		
M9 – Arch				
M9a  Arch	**M9b**  Arch with M5a	**M9c**  Arch with M6b	**M9d**  Arch with M7a	**M9e**  Arch with M8a

Belegiš I Neck Motif Frequencies

Count	Zone 1A			Zone 1B			Zone 1C		
	M1a	M1b	Total	M1a	M1b	Total	M1a	M1b	Total
Belegiš -S.Gumno	28	6	*34*	25	11	*36*	29	5	*34*
Ilandža	5	0	*5*	5	0	*5*	5	0	*5*
Kaluđerske Livade	7	1	*8*	8	4	*12*	9	2	*11*
Karaburma	41	2	*43*	34	22	*56*	51	5	*56*
Stubarlija	3	0	*3*	3	0	*3*	1	0	*1*
Surčin	13	2	*15*	16	3	*19*	15	4	*19*
Tolvadia	6	0	*6*	6	0	*6*	5	0	*5*
Vatin	4	0	*4*	6	0	*6*	3	0	*3*
Vršac – S. Ludoš	5	0	*5*	8	0	*8*	3	0	*3*
Percentage	**M1a**	**M1b**	**Total**	**M1a**	**M1b**	**Total**	**M1a**	**M1b**	**Total**
Belegiš -S.Gumno	82.4%	17.6%	*100%*	69.4%	30.6%	*100%*	85.3%	14.7%	*100%*
Ilandža	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Kaluđerske Livade	87.5%	12.5%	*100%*	66.7%	33.3%	*100%*	81.8%	18.2%	*100%*
Karaburma	95.3%	4.7%	*100%*	60.7%	39.3%	*100%*	91.1%	8.9%	*100%*
Stubarlija	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Surčin	86.7%	13.3%	*100%*	84.2%	15.8%	*100%*	78.9%	21.1%	*100%*
Tolvadia	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Vatin	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Vršac – S. Ludoš	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*

Belegiš II Count	Zone 1A			Zone 1B			Zone 1C		
	M1a	M1b	Total	M1a	M1b	Total	M1a	M1b	Total
Belegiš -S.Gumno	10	0	*10*	8	0	*8*	1	1	*2*
Ilandža	0	0	*0*	0	0	*0*	0	0	*0*
Kaluđerske Livade	3	1	*4*	3	0	*3*	1	0	*1*
Karaburma	13	0	*13*	8	0	*8*	3	0	*3*
Stubarlija	2	0	*2*	2	0	*2*	2	0	*2*
Surčin	12	0	*12*	5	0	*5*	0	1	*1*
Tolvadia	1	0	*1*	0	0	*0*	0	0	*0*
Vatin	5	0	*5*	1	2	*3*	0	0	*0*
Vršac – S. Ludoš	2	0	*2*	0	1	*1*	0	0	*0*
Percentage	**M1a**	**M1b**	**Total**	**M1a**	**M1b**	**Total**	**M1a**	**M1b**	**Total**
Belegiš -S.Gumno	100%	0%	100%	100%	0%	*100%*	50%	50%	*100%*
Ilandža	0%	0%	0%	0%	0%	*0%*	0%	0%	0%
Kaluđerske Livade	75%	25%	100%	100%	0%	*100%*	100%	0%	*100%*
Karaburma	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Stubarlija	100%	0%	*100%*	100%	0%	*100%*	100%	0%	*100%*
Surčin	100%	0%	*100%*	100%	0%	*100%*	0%	100%	*100%*
Tolvadia	100%	0%	*100%*	0%	0%	0%	0%	0%	0%
Vatin	100%	0%	*100%*	33.3%	67.7%	*100%*	0%	0%	0%
Vršac – S. Ludoš	100%	0%	*100%*	0%	100%	*100%*	0%	0%	0%

Belegiš I Shoulder Motif Frequencies (2A)

Count	Zone 2A									
	M1a	M1b	M2a	M2b	M2c	M3a	M3b	M4a	M4b	*Tot.*
Belegiš-S.Gumno	0	6	0	0	1	0	2	0	0	*9*
Ilandža	0	0	0	2	1	1	0	0	0	*4*
Kaluđerske Livade	0	2	0	1	0	0	0	0	0	*3*
Karaburma	3	8	0	1	0	1	1	0	0	*14*
Stubarlija	3	0	2	0	0	0	0	0	0	*5*
Surčin	4	4	1	3	0	0	0	0	0	*12*
Tolvadia	0	0	2	1	0	0	0	0	0	*3*
Vatin	1	0	1	4	0	0	1	2	0	*9*
Vršac – S. Ludoš	1	0	2	3	2	0	0	2	0	*10*
Percentage	**M1a**	**M1b**	**M2a**	**M2b**	**M2c**	**M3a**	**M3b**	**M4a**	**M4b**	***Tot.***
Belegiš-S.Gumno	0%	66.7%	0%	0%	11.1%	0%	22.2%	0%	0%	*100%*
Ilandža	0%	0%	0%	50%	25%	25%	0%	0%	0%	*100%*
Kaluđerske Livade	0%	66.7%	0%	33.3%	0%	0%	0%	0%	0%	*100%*
Karaburma	21.4%	57.1%	0%	7.1%	0%	7.1%	7.1%	0%	0%	*100%*
Stubarlija	60%	0%	40%	0%	0%	0%	0%	0%	0%	*100%*
Surčin	33.3%	33.3%	8.4%	25%	0%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	66.7%	33.3%	0%	0%	0%	0%	0%	*100%*
Vatin	11.1%	0%	11.1%	44.4%	0%	0%	11.1%	22.2%	0%	*100%*
Vršac – S. Ludoš	10%	0%	20%	30%	20%	0%	0%	20%	0%	*100%*

Belegiš II Shoulder Motif Frequencies (2B)

Count	Zone 2A									
	M1a	M1b	M2a	M2b	M2c	M3a	M3b	M4a	M4b	*Tot.*
Belegiš-S.Gumno	0	0	0	0	17	0	0	0	0	*17*
Ilandža	0	0	0	0	0	1	0	0	0	*1*
Kaluđerske Livade	0	0	0	4	2	0	0	0	0	*6*
Karaburma	0	0	0	1	23	0	0	0	0	*24*
Stubarlija	0	0	0	0	6	0	0	0	0	*6*
Surčin	0	0	0	0	15	0	0	0	0	*15*
Tolvadia	0	0	0	0	2	0	0	0	0	*2*
Vatin	0	0	0	0	7	0	0	0	0	*7*
Vršac – S. Ludoš	0	0	0	3	4	0	0	0	0	*7*
Percentage	**M1a**	**M1b**	**M2a**	**M2b**	**M2c**	**M3a**	**M3b**	**M4a**	**M4b**	***Tot.***
Belegiš-S.Gumno	0%	0%	0%	0%	100%	0%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	0%	100%	0%	0%	0%	*100%*
Kaluđerske Livade	0%	0%	0%	66.7%	33.3%	0%	0%	0%	0%	*100%*
Karaburma	0%	0%	0%	4.2%	95.8%	0%	0%	0%	0%	*100%*
Stubarlija	0%	0%	0%	0%	100%	0%	0%	0%	0%	*100%*
Surčin	0%	0%	0%	0%	100%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	0%	0%	100%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	100%	0%	0%	0%	0%	*100%*
Vršac – S. Ludoš	0%	0%	0%	42.9%	57.1%	0%	0%	0%	0%	*100%*

Belegiš I Shoulder Motif Frequencies (2B)

Count	Zone 2B									
	M1a	M1b	M2a	M2b	M2c	M3a	M3b	M4a	M4b	*Tot.*
Belegiš-S.Gumno	0	5	24	2	0	0	2	0	1	*34*
Ilandža	0	0	0	6	0	0	0	0	0	*6*
Kaluđerske Livade	2	2	0	1	0	0	0	0	0	*5*
Karaburma	4	4	1	31	2	0	1	0	0	*43*
Stubarlija	1	0	3	2	0	0	0	0	0	*6*
Surčin	2	3	5	3	0	0	0	0	0	*13*
Tolvadia	0	0	0	2	0	0	0	0	0	*2*
Vatin	0	0	2	2	2	0	0	0	0	*6*
Vršac – S. Ludoš	1	1	3	0	0	0	1	1	0	*7*
Percentage	**M1a**	**M1b**	**M2a**	**M2b**	**M2c**	**M3a**	**M3b**	**M4a**	**M4b**	***Tot.***
Belegiš-S.Gumno	0%	14.7%	70.6%	5.9%	0%	0%	5.9%	0%	3%	*100%*
Ilandža	0%	0%	0%	100%	0%	0%	0%	0%	0%	*100%*
Kaluđerske Livade	40%	40%	0%	20%	0%	0%	0%	0%	0%	*100%*
Karaburma	9.3%	9.3%	2.3%	72.1%	4.7%	0%	2.3%	0%	0%	*100%*
Stubarlija	16.7%	0%	50%	33.3%	0%	0%	0%	0%	0%	*100%*
Surčin	15.4%	23.1%	38.5%	23.1%	0%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	0%	100%	0%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	33.3%	33.3%	33.3%	0%	0%	0%	0%	*100%*
Vršac – S. Ludoš	14.3%	14.3%	42.9%	0%	0%	0%	14.3%	14.3%	0%	*100%*

Belegiš II Shoulder Motif Frequencies (2B)

Count	Zone 2B									
	M1a	M1b	M2a	M2b	M2c	M3a	M3b	M4a	M4b	*Tot.*
Belegiš-S.Gumno	0	0	1	1	1	0	0	0	0	*3*
Ilandža	0	0	0	0	0	0	0	0	0	*0*
Kaluđerske Livade	0	0	0	1	0	0	0	0	0	*1*
Karaburma	0	0	0	2	0	0	0	0	0	*2*
Stubarlija	0	0	0	1	0	0	0	0	0	*1*
Surčin	0	0	0	1	1	0	0	0	0	*2*
Tolvadia	0	1	0	0	0	0	0	0	0	*1*
Vatin	0	0	0	0	0	0	0	0	0	*0*
Vršac – S. Ludoš	0	0	0	0	0	0	0	0	0	*0*
Percentage	**M1a**	**M1b**	**M2a**	**M2b**	**M2c**	**M3a**	**M3b**	**M4a**	**M4b**	***Tot.***
Belegiš-S.Gumno	0%	0%	33.3%	33.3%	33.3%	0%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	0%	*0%*
Kaluđerske Livade	0%	0%	0%	100%	0%	0%	0%	0%	0%	*100%*
Karaburma	0%	0%	0%	100%	0%	0%	0%	0%	0%	*100%*
Stubarlija	0%	0%	0%	100%	0%	0%	0%	0%	0%	*100%*
Surčin	0%	0%	0%	50%	50%	0%	0%	0%	0%	*100%*
Tolvadia	0%	100%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	0%	0%	0%	0%	0%	*0%*
Vršac – S. Ludoš	0%	0%	0%	0%	0%	0%	0%	0%	0%	*0%*

Belegiš I Belly Motif Frequencies (3A)

Count	Zone 3A									
	M1a	M1b	M2b	M3a	M3b	M5a	M5b	M5c	M6a	M6b
Belegiš-S.Gumno	0	1	0	0	0	4	0	0	20	1
Ilandža	0	0	0	0	0	5	0	0	0	0
Kaluđerske Livade	0	0	0	0	0	3	0	0	11	0
Karaburma	0	4	0	0	0	6	0	0	14	0
Stubarlija	0	0	0	0	0	0	0	0	0	0
Surčin	0	2	0	0	0	7	1	0	12	0
Tolvadia	0	0	0	0	0	3	0	0	1	0
Vatin	0	0	2	0	0	4	0	0	0	2
Vršac – S. Ludoš	0	0	2	0	3	4	0	0	1	0
Percentage	**M1a**	**M1b**	**M2b**	**M3a**	**M3b**	**M5a**	**M5b**	**M5c**	**M6a**	**M6b**
Belegiš-S.Gumno	0%	2.8%	0%	0%	0%	11.1%	0%	0%	55.6%	2.8%
Ilandža	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Kaluđerske Livade	0%	0%	0%	0%	0%	20%	0%	0%	73.3%	0%
Karaburma	0%	6.3%	0%	0%	0%	18.8%	0%	0%	43.8%	0%
Stubarlija	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surčin	0%	8.7%	0%	0%	0%	30.4%	4.3%	0%	52.2%	0%
Tolvadia	0%	0%	0%	0%	0%	75%	0%	0%	25%	0%
Vatin	0%	0%	25%	0%	0%	50%	0%	0%	0%	25%
Vršac – S. Ludoš	0%	0%	20%	0%	0%	30%	40%	0%	10%	0%

Count	Zone 3A								
	M7a	M8a	M8b	M9a	M9b	M9c	M9d	M9e	*Tot.*
Belegiš-S.Gumno	4	5	0	0	1	0	0	0	*36*
Ilandža	0	0	0	0	0	0	0	0	*5*
Kaluđerski Livade	0	1	0	0	0	0	0	0	*15*
Karaburma	2	1	5	0	0	0	0	0	*32*
Stubarlija	0	0	0	0	0	0	0	0	*0*
Surčin	1	0	0	0	0	0	0	0	*23*
Tolvadia	0	0	0	0	0	0	0	0	*4*
Vatin	0	0	0	0	0	0	0	0	*8*
Vršac – S. Ludoš	0	0	0	0	0	0	0	0	*10*
Percentage	**M7a**	**M8a**	**M8b**	**M9a**	**M9b**	**M9c**	**M9d**	**M9e**	***Tot.***
Belegiš-S.Gumno	11.1%	13.9%	0%	0%	2.8%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Kaluđerske Livade	0%	6.7%	0%	0%	0%	0%	0%	0%	*100%*
Karaburma	12.5%	3.1%	15.6%	0%	0%	0%	0%	0%	*100%*
Stubarlija	0%	0%	0%	0%	0%	0%	0%	0%	*0%*
Surčin	4.3%	0%	0%	0%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vršac – S. Ludoš	0%	0%	0%	0%	0%	0%	0%	0%	*100%*

Belegiš II Belly Motif Frequencies (3A)

Count	Zone 3A									
	M1a	M1b	M2b	M3a	M3b	M5a	M5b	M5c	M6a	M6b
Belegiš-S.Gumno	0	0	0	0	0	3	0	0	0	0
Ilandža	0	0	0	0	0	0	0	0	0	0
Kaluđerske Livade	0	0	0	0	0	0	0	0	0	0
Karaburma	0	0	0	0	0	2	2	0	0	0
Stubarlija	0	0	0	0	0	0	0	0	0	0
Surčin	0	0	0	0	0	2	0	0	0	0
Tolvadia	0	0	0	0	0	3	0	0	1	0
Vatin	0	0	0	0	0	0	0	0	0	0
Vršac – S. Ludoš	0	0	0	0	0	0	0	0	0	0
Percentage	**M1a**	**M1b**	**M2b**	**M3a**	**M3b**	**M5a**	**M5b**	**M5c**	**M6a**	**M6b**
Belegiš-S.Gumno	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kaluđerske Livade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Karaburma	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%
Stubarlija	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surčin	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Tolvadia	0%	0%	0%	0%	0%	75%	0%	0%	25%	0%
Vatin	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vršac – S. Ludoš	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Belegiš II Count	Zone 3A								
	M7a	M8a	M8b	M9a	M9b	M9c	M9d	M9e	*Tot.*
Belegiš-S.Gumno	0	0	0	0	0	0	0	0	*3*
Ilandža	0	0	0	0	0	0	0	0	*0*
Kaluđerske Livade	0	0	0	0	0	0	0	0	*0*
Karaburma	0	0	0	0	0	0	0	0	*4*
Stubarlija	0	0	0	0	0	0	0	0	*0*
Surčin	0	0	0	0	0	0	0	0	*2*
Tolvadia	0	0	0	0	0	0	0	0	*4*
Vatin	0	0	0	0	0	0	0	0	*0*
Vršac – S. Ludoš	0	0	0	0	0	0	0	0	*0*
Percentage	**M7a**	**M8a**	**M8b**	**M9a**	**M9b**	**M9c**	**M9d**	**M9e**	***Tot.***
Belegiš-S.Gumno	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kaluđerske Livade	0%	0%	0%	0%	0%	0%	0%	0%	0%
Karaburma	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Stubarlija	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surčin	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vršac – S. Ludoš	0%	0%	0%	0%	0%	0%	0%	0%	0%

Belegiš I Belly Motif Frequencies (3B)

Count	Zone 3B									
	M1a	M1b	M2b	M3a	M3b	M5a	M5b	M5c	M6a	M6b
Belegiš-S.Gumno	0	1	0	0	0	4	0	0	0	14
Ilandža	0	0	0	0	0	2	0	0	1	0
Kaluđerske Livade	0	1	0	0	0	1	0	1	1	0
Karaburma	0	1	0	0	0	6	0	0	2	0
Stubarlija	0	0	0	0	0	3	0	0	0	0
Surčin	0	0	0	0	0	6	0	0	0	3
Tolvadia	0	0	0	0	0	1	0	0	0	0
Vatin	0	0	0	0	0	1	0	0	0	2
Vršac – S. Ludoš	2	0	0	0	0	3	0	0	0	0
Percentage	**M1a**	**M1b**	**M2b**	**M3a**	**M3b**	**M5a**	**M5b**	**M5c**	**M6a**	**M6b**
Belegiš-S.Gumno	0%	3.6%	0%	0%	0%	14.3%	0%	0%	0%	50%
Ilandža	0%	0%	0%	0%	0%	40%	0%	0%	20%	0%
Kaluđerske Livade	0%	7.7%	0%	0%	0%	7.7%	0%	7.7%	7.7%	0%
Karaburma	0%	1.8%	0%	0%	0%	10.9%	0%	0%	3.6%	0%
Stubarlija	0%	0%	0%	0%	0%	33.3%	0%	0%	0%	0%
Surčin	0%	0%	0%	0%	0%	23.1%	0%	0%	0%	11.5%
Tolvadia	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%
Vatin	0%	0%	0%	0%	0%	25%	0%	0%	0%	50%
Vršac – S. Ludoš	25%	0%	0%	0%	0%	37.5%	0%	0%	0%	0%

Count	Zone 3B								
	M7a	M8a	M8b	M9a	M9b	M9c	M9d	M9e	*Tot.*
Belegiš-S.Gumno	3	5	0	0	1	0	0	0	*28*
Ilandža	0	0	0	0	2	0	0	0	*5*
Kaluđerske Livade	1	3	2	1	1	1	0	0	*13*
Karaburma	0	0	5	35	1	2	3	0	*55*
Stubarlija	1	0	0	3	2	0	0	0	*9*
Surčin	0	2	0	4	2	4	1	4	*26*
Tolvadia	0	0	0	1	0	1	0	0	*2*
Vatin	0	0	0	0	0	1	0	0	*4*
Vršac – S. Ludoš	0	0	1	0	2	0	0	0	*8*
Percentage	**M7a**	**M8a**	**M8b**	**M9a**	**M9b**	**M9c**	**M9d**	**M9e**	***Tot.***
Belegiš-S.Gumno	10.7%	17.6%	0%	0%	3.6%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	40%	0%	0%	0%	*100%*
Kaluđerske Livade	7.7%	23.1%	15.4%	7.7%	7.7%	7.7%	0%	0%	*100%*
Karaburma	0%	0%	9.1%	63.3%	1.8%	3.6%	5.5%	0%	*100%*
Stubarlija	11.1%	0%	0%	33.3%	22.2%	0%	0%	0%	*100%*
Surčin	0%	7.7%	0%	7.7%	15.4%	15.4%	3.8%	15.4%	*100%*
Tolvadia	0%	0%	0%	50%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	0%	25%	0%	0%	*100%*
Vršac – S. Ludoš	0%	0%	12.5%	0%	25%	0%	0%	0%	*100%*

Belegiš II Belly Motif Frequencies (3B)

Count	Zone 3B									
	M1a	M1b	M2b	M3a	M3b	M5a	M5b	M5c	M6a	M6b
Belegiš-S.Gumno	0	0	0	0	0	24	2	1	0	0
Ilandža	0	0	0	0	0	0	0	0	0	0
Kaluđerske Livade	0	0	0	0	0	7	0	0	0	0
Karaburma	0	0	0	0	0	17	7	0	0	0
Stubarlija	0	0	0	0	0	4	0	0	0	0
Surčin	0	0	0	0	0	26	4	0	0	0
Tolvadia	0	0	0	0	0	2	0	0	0	0
Vatin	0	0	0	0	0	4	2	0	0	0
Vršac – S. Ludoš	0	0	0	0	0	1	2	0	0	0
Percentage	**M1a**	**M1b**	**M2b**	**M3a**	**M3b**	**M5a**	**M5b**	**M5c**	**M6a**	**M6b**
Belegiš-S.Gumno	0%	0%	0%	0%	0%	88.9%	7.4%	3.7%	0%	0%
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kaluđerske Livade	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Karaburma	0%	0%	0%	0%	0%	70.8%	29.2%	0%	0%	0%
Stubarlija	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Surčin	0%	0%	0%	0%	0%	86.7%	13.3%	0%	0%	0%
Tolvadia	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Vatin	0%	0%	0%	0%	0%	67.7%	33.3%	0%	0%	0%
Vršac – S. Ludoš	0%	0%	0%	0%	0%	33.3%	67.7%	0%	0%	0%

Count	Zone 3B								
	M7a	M8a	M8b	M9a	M9b	M9c	M9d	M9e	*Tot.*
Belegiš-S.Gumno	0	0	0	0	0	0	0	0	*27*
Ilandža	0	0	0	0	0	0	0	0	*0*
Kaluđerske Livade	0	0	0	0	0	0	0	0	*7*
Karaburma	0	0	0	0	0	0	0	0	*24*
Stubarlija	0	0	0	0	0	0	0	0	*4*
Surčin	0	0	0	0	0	0	0	0	*30*
Tolvadia	0	0	0	0	0	0	0	0	*2*
Vatin	0	0	0	0	0	0	0	0	*6*
Vršac – S. Ludoš	0	0	0	0	0	0	0	0	*3*
Percentage	**M7a**	**M8a**	**M8b**	**M9a**	**M9b**	**M9c**	**M9d**	**M9e**	***Tot.***
Belegiš-S.Gumno	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Ilandža	0%	0%	0%	0%	0%	0%	0%	0%	*0%*
Kaluđerske Livade	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Karaburma	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Stubarlija	0%	0%	0%	0%	0%	0%	0%	0%	100%
Surčin	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Tolvadia	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vatin	0%	0%	0%	0%	0%	0%	0%	0%	*100%*
Vršac – S. Ludoš	0%	0%	0%	0%	0%	0%	0%	0%	*100%*

I.V Decorative Method/ Technique

Decorative Methods

Cord	Incised	Pseudo Cord	Impressed
			
Applied	**Inlaid**	**Facetted**	**Fluted**
			

Belegiš I and II Decorative Method Frequencies

Count	Cord	Incised	Pseudo Cord	Impressed	Applied	Inlaid	Facetted	Fluted
Belegiš-S.Gumno	35	16	0	0	43	0	2	23
Ilandža	4	0	1	1	7	0	0	0
Kaluđerske Livade	15	8	0	0	13	0	1	5
Karaburma	17	55	0	1	61	0	5	16
Stubarlija	1	1	0	0	8	1	1	7
Surčin	17	15	1	4	20	0	5	28
Tolvadia	7	2	0	4	9	0	0	0
Vatin	6	1	0	4	21	0	5	5
Vršac – S. Ludoš	4	1	0	8	21	0	4	4

Cord Techniques

Single Cord	Double Cord
No Photo Available	
Triple Cord	Quad. Cord
	

Belegiš I and II Cord Technique Frequencies

Count	**Single Cord**	**Double Cord**	**Triple Cord**	**Quad. Cord**	***Total***
Belegiš-S.Gumno	0	18	17	0	35
Ilandža	0	0	3	1	*4*
Kaluđerske Livade	1	4	10	0	*15*
Karaburma	0	14	3	0	*17*
Stubarlija	0	0	1	0	*1*
Surčin	0	4	8	5	*17*
Tolvadia	0	0	5	2	*7*
Vatin	0	0	5	1	*6*
Vršac – S. Ludoš	0	0	3	1	*4*
Percentage	**Single Cord**	**Double Cord**	**Triple Cord**	**Quad. Cord**	***Total***
Belegiš-S.Gumno	0%	51.4%	48.6%	0%	100%
Ilandža	0%	0%	75%	25%	100%
Kaluđerske Livade	6.7%	26.7%	66.6%	0%	100%
Karaburma	0%	82.4%	17.6%	0%	100%
Stubarlija	0%	0%	100%	0%	100%
Surčin	0%	23.5%	47%	29.5%	100%
Tolvadia	0%	0%	71.4%	28.6%	100%
Vatin	0%	0%	83.3%	18.7%	100%
Vršac – S. Ludoš	0%	0%	75%	25%	100%

Incised Techniques

Single Incised	Double Incised	Triple Incised
		

Belegiš I and II Incised Technique Frequencies

Count	**Single Incised**	**Double Incised**	**Triple Incised**	***Total***
Belegiš-S.Gumno	1	1	14	16
Ilandža	0	0	0	*0*
Kaluđerske Livade	0	2	6	*8*
Karaburma	5	5	45	*55*
Stubarlija	0	0	1	*1*
Surčin	2	3	10	*15*
Tolvadia	1	0	1	*2*
Vatin	0	0	1	*1*
Vršac – S. Ludoš	0	0	1	*1*
Percentage	**Single Incised**	**Double Incised**	**Triple Incised**	***Total***
Belegiš-S.Gumno	6.3%	6.3%	87.4%	100%
Ilandža	0%	0%	0%	0%
Kaluđerske Livade	0%	25%	75%	100%
Karaburma	9.1%	9.1%	81.8%	100%
Stubarlija	0%	0%	100%	100%
Surčin	13.3%	20%	66.7%	100%
Tolvadia	50%	0%	50%	100%
Vatin	0%	0%	100%	100%
Vršac – S. Ludoš	0%	0%	100%	100%

Pseudo Cord Techniques

Single Pseudo Cord	Quadruple Pseudo Cord
	

Belegiš I and II Pseudo Cord Technique Frequencies

Count	Single Pseudo Cord	Quad. Pseudo Cord	Total
Belegiš-S.Gumno	0	0	0
Ilandža	0	1	1
Kaluđerske Livade	0	0	0
Karaburma	0	0	0
Stubarlija	0	0	0
Surčin	1	0	1
Tolvadia	0	0	0
Vatin	0	0	0
Vršac – S. Ludoš	0	0	0
Percentage	**Single Pseudo Cord**	**Quad. Pseudo Cord**	**Total**
Belegiš-S.Gumno	0%	0%	0%
Ilandža	0%	100%	100%
Kaluđerske Livade	0%	0%	0%
Karaburma	0%	0%	0%
Stubarlija	0%	0%	0%
Surčin	100%	0%	100%
Tolvadia	0%	0%	0%
Vatin	0%	0%	0%
Vršac – S. Ludoš	0%	0%	0%

Impressed Techniques

Small Impressed	Medium Impressed	Large Impressed
		

Belegiš I and II Impressed Technique Frequencies

Count	Small Impressed	Medium Impressed	Large Impressed	Total
Belegiš-S.Gumno	0	0	1	*1*
Ilandža	0	0	1	*1*
Kaluđerske Livade	0	0	0	*0*
Karaburma	0	1	0	*1*
Stubarlija	0	0	0	*0*
Surčin	3	1	0	*4*
Tolvadia	1	3	0	*4*
Vatin	1	0	3	*4*
Vršac – S. Ludoš	2	3	3	*8*
Percentage	**Small Impressed**	**Medium Impressed**	**Large Impressed**	**Total**
Belegiš-S.Gumno	0%	0%	100%	100%
Ilandža	0%	0%	100%	100%
Kaluđerske Livade	0%	0%	0%	100%
Karaburma	0%	100%	0%	100%
Stubarlija	0%	0%	0%	100%
Surčin	75%	25%	0%	100%
Tolvadia	25%	75%	0%	100%
Vatin	25%	0%	75%	100%
Vršac – S. Ludoš	25%	37.5%	37.5%	100%

Inlay Techniques

Inlaid Impression	Inlaid Incision
	

Belegiš I and II Inlay Technique Frequency

Count	**Inlaid Impression**	**Inlaid Incision**	**Total**
Belegiš-S.Gumno	0	0	0
Ilandža	0	0	0
Kaluđerske Livade	0	0	0
Karaburma	0	0	0
Stubarlija	1	1	2
Surčin	0	0	0
Tolvadia	0	0	0
Vatin	0	0	0
Vršac – S. Ludoš	0	0	0
Percentage	**Inlaid Impression**	**Inlaid Incision**	**Total**
Belegiš-S.Gumno	0%	0%	0%
Ilandža	0%	0%	0%
Kaluđerske Livade	0%	0%	0%
Karaburma	0%	0%	0%
Stubarlija	50%	50%	100%
Surčin	0%	0%	0%
Tolvadia	0%	0%	0%
Vatin	0%	0%	0%
Vršac – S. Ludoš	0%	0%	0%

Applied Techniques

Applied	Applied and Impressed	Applied and Incised
		

Belegiš I and II Applied Technique Frequency

Count	Applied	Applied and Impressed	Applied and Incised	Total
Belegiš-S.Gumno	42	1	0	*43*
Ilandža	7	0	0	*7*
Kaluđerske Livade	12	1	0	*13*
Karaburma	61	0	3	*64*
Stubarlija	8	0	0	*8*
Surčin	19	1	0	*20*
Tolvadia	6	1	2	*9*
Vatin	18	1	2	*21*
Vršac – S. Ludoš	18	1	2	*21*
Percentage	**Applied**	**Applied and Impressed**	**Applied and Incised**	**Total**
Belegiš-S.Gumno	97.7%	2.3%	0%	100%
Ilandža	100%	0%	0%	100%
Kaluđerske Livade	92.3%	7.7%	0%	100%
Karaburma	95.3%	0%	4.7%	100%
Stubarlija	100%	0%	0%	100%
Surčin	95%	5%	0%	100%
Tolvadia	66.7%	11.1%	22.2%	100%
Vatin	85.7%	4.8%	9.6%	100%
Vršac – S. Ludoš	85.7%	4.8%	9.6%	100%

Facet Techniques

Small Gap Facet



Large Gap Facet



Belegiš I and II Facet Technique Frequency

Count	Small Gap Facet	Large Gap Facet	Total
Belegiš-S.Gumno	2	0	2
Ilandža	0	0	0
Kaluđerske Livade	0	1	1
Karaburma	5	0	5
Stubarlija	0	1	1
Surčin	3	2	5
Tolvadia	0	0	0
Vatin	0	5	5
Vršac – S. Ludoš	0	4	4
Percentage	**Small Gap Facet**	**Large Gap Facet**	**Total**
Belegiš-S.Gumno	100%	0%	100%
Ilandža	0%	0%	0%
Kaluđerske Livade	0%	0%	0%
Karaburma	100%	0%	100%
Stubarlija	0%	100%	100%
Surčin	60%	40%	100%
Tolvadia	0%	0%	0%
Vatin	0%	100%	100%
Vršac – S. Ludoš	0%	100%	100%

Fluting Techniques

Thin Fluting	Thick Fluting
	

Belegiš I and II Fluting Technique Frequency

Count	Thin Fluting	Thick Fluting	Total
Belegiš-S.Gumno	4	19	23
Ilandža	0	0	0
Kaluđerske Livade	1	4	5
Karaburma	8	8	16
Stubarlija	0	7	7
Surčin	7	21	28
Tolvadia	0	0	0
Vatin	1	4	5
Vršac – S. Ludoš	0	4	4

Percentage	Thin Fluting	Thick Fluting	Total
Belegiš-S.Gumno	17.4%	82.6%	100%
Ilandža	0%	0%	0%
Kaluđerske Livade	20%	80%	100%
Karaburma	50%	50%	100%
Stubarlija	0%	100%	100%
Surčin	25%	75%	100%
Tolvadia	0%	0%	0%
Vatin	20%	80%	100%
Vršac – S. Ludoš	0%	100%	100%

Cord Execution

Neat Cord	Rough Cord
	

Belegiš I and II Cord Execution Frequency

Count	**Neat Cord**	**Rough Cord**	***Total***	**Light Cord**	**Deep Cord**	***Total***
Belegiš-S.Gumno	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Ilandža	4	0	*4*	1	3	*4*
Kaluđerske Livade	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Karaburma	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Stubarlija	1	0	*1*	1	0	*1*
Surčin	13	4	*17*	6	11	*17*
Tolvadia	7	1	*8*	6	2	*8*
Vatin	4	1	*5*	3	2	*5*
Vršac – S. Ludoš	4	0	*4*	2	2	*4*
Percentage	**Neat Cord**	**Rough Cord**	***Total***	**Light Cord**	**Deep Cord**	***Total***
Belegiš-S.Gumno	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Ilandža	100%	0%	100%	25%	75%	100%
Kaluđerske Livade	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Karaburma	N/A	N/A	*N/A*	N/A	N/A	*N/A*
Stubarlija	100%	0%	100%	100%	0%	100%
Surčin	76.5%	23.5%	100%	35.3%	64.7%	100%
Tolvadia	87.5%	12.5%	100%	75%	25%	100%
Vatin	80%	20%	100%	60%	40%	100%
Vršac – S. Ludoš	100%	0%	100%	50%	50%	100%

Incision Execution

Neat Incised



Rough Incised



Light Incised



Deep Incised



Belegiš I and II Incision Execution Frequency

Count	**Neat Incised**	**Rough Incised**	***Total***	**Light Incised**	**Deep Incised**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0	0	0	0	0	0
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	1	0	*1*	0	1	*1*
Surčin	5	10	*15*	7	8	*15*
Tolvadia	2	0	*2*	1	1	*2*
Vatin	1	0	*1*	1	0	*1*
Vršac – S. Ludoš	1	0	*1*	1	0	*1*
Percentage	**Neat Incised**	**Rough Incised**	***Total***	**Light Incised**	**Deep Incised**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	0%	0%	0%	0%	0%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	100%	0%	100%	0%	100%	100%
Surčin	33.3%	66.7%	100%	46.7%	53.3%	100%
Tolvadia	100%	0%	100%	50%	50%	100%
Vatin	100%	0%	100%	100%	0%	100%
Vršac – S. Ludoš	100%	0%	100%	100%	0%	100%

Pseudo Cord Execution

Light Pseudo Cord	Deep Pseudo Cord
No Example	

Belegiš I and II Pseudo Cord/ Impression Execution Frequency

Count	**Light Pseudo Cord**	**Deep Pseudo Cord**	***Total***	**Light Impression**	**Deep Impression**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0	1	1	0	0	0
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	0	*0*	0	0	*0*
Surčin	0	1	*1*	1	3	*4*
Tolvadia	0	0	0	0	1	*1*
Vatin	0	0	0	3	1	*4*
Vršac – S. Ludoš	0	0	0	6	2	*8*
Percentage	**Light Pseudo Cord**	**Deep Pseudo Cord**	***Total***	**Light Impression**	**Deep Impression**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	100%	100%	0%	0%	0%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	0%	0%	0%	0%	0%
Surčin	0%	100%	100%	25%	75%	100%
Tolvadia	0%	0%	0%	0%	100%	100%
Vatin	0%	0%	0%	75%	25%	100%
Vršac – S. Ludoš	0%	0%	0%	75%	25%	100%

Facet Execution

Light Faceting



Deep Faceting



Belegiš I and II Facet Execution Frequency

Count	Light Faceting	Deep Faceting	*Total*	Light Fluting	Deep Fluting	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0	0	0	0	0	0
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	1	1	5	2	*7*
Surčin	2	3	5	20	8	28
Tolvadia	0	0	0	0	0	*0*
Vatin	0	5	5	5	0	*5*
Vršac – S. Ludoš	0	4	4	0	4	*4*
Percentage	**Light Faceting**	**Deep Faceting**	***Total***	**Light Fluting**	**Deep Fluting**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	0%	0%	0%	0%	0%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	100%	100%	71.4%	28.6%	100%
Surčin	40%	60%	100%	71.4%	28.6%	100%
Tolvadia	0%	0%	0%	0%	0%	0%
Vatin	0%	100%	100%	100%	0%	100%
Vršac – S. Ludoš	0%	100%	100%	0%	100%	100%

II.VI Surface Finish

Belegiš I Interior Surface Frequencies

Count	Horizontal Smooth	Vertical Smooth	Horizontal Light Burnish	Vertical Light Burnish	Horizontal Medium Burnish	Vertical Medium Burnish	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	6	1	0	0	0	0	7
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	14	0	2	1	0	0	17
Surčin	37	4	0	0	0	0	41
Tolvadia	5	0	0	0	0	0	5
Vatin	16	0	1	0	1	0	18
Vršac – S. Ludoš	19	0	2	0	1	0	22
Percentage	**Horizontal Smooth**	**Vertical Smooth**	**Horizontal Light Burnish**	**Vertical Light Burnish**	**Horizontal Medium Burnish**	**Vertical Medium Burnish**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	85.7%	14.4%	0%	0%	0%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	82.4%	0%	11.8%	5.9%	0%	0%	100%
Surčin	90.2%	9.8%	0%	0%	0%	0%	100%
Tolvadia	100%	0%	0%	0%	0%	0%	100%
Vatin	88.9%	0%	5.6%	0%	5.6%	0%	100%
Vršac – S. Ludoš	86.4%	0%	9.1%	0%	4.5%	0%	100%

Belegiš II Interior Surface Frequencies

Count	Horizontal Smooth	Vertical Smooth	Horizontal Light Burnish	Vertical Light Burnish	Horizontal Medium Burnish	Vertical Medium Burnish	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	4	0	0	0	0	0	4
Surčin	22	8	1	0	0	0	31
Tolvadia	2	0	0	0	0	0	2
Vatin	5	0	1	0	1	0	7
Vršac – S. Ludoš	5	0	2	0	0	0	7
Percentage	Horizontal Smooth	Vertical Smooth	Horizontal Light Burnish	Vertical Light Burnish	Horizontal Medium Burnish	Vertical Medium Burnish	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	100%	0%	0%	0%	0%	0%	100%
Surčin	71%	25.8%	3.2%	0%	0%	0%	100%
Tolvadia	100%	0%	0%	0%	0%	0%	100%
Vatin	71.4%	0%	14.9%	0%	14.9%	0%	100%
Vršac – S. Ludoš	71.4%	0%	28.6%	0%	0%	0%	100%

Belegiš I Exterior Surface Frequencies

Count	**Horizontal Smooth**	**Vertical Smooth**	**Horizontal Light Burnish**	**Vertical Light Burnish**	**Horizontal Medium Burnish**	**Vertical Medium Burnish**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	5	0	2	0	0	0	7
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	14	0	1	0	2	0	17
Surčin	30	0	8	3	0	0	41
Tolvadia	4	0	1	0	0	0	5
Vatin	16	0	0	1	1	0	18
Vršac – S. Ludoš	18	0	3	0	1	0	22
Percentage	**Horizontal Smooth**	**Vertical Smooth**	**Horizontal Light Burnish**	**Vertical Light Burnish**	**Horizontal Medium Burnish**	**Vertical Medium Burnish**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	71.4%	0%	28.6%	0%	0%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	82.4%	0%	5.9%	0%	11.8%	0%	100%
Surčin	73.2%	0%	19.5%	7.3%	0%	0%	100%
Tolvadia	80%	0%	20%	0%	0%	0%	100%
Vatin	88.9%	0%	0%	5.6%	5.6%	0%	100%
Vršac – S. Ludoš	81.8%	0%	13.6%	0%	4.6%	0%	100%

Belegiš II Exterior Surface Frequencies

Count	Horizontal Smooth	Vertical Smooth	Horizontal Light Burnish	Vertical Light Burnish	Horizontal Medium Burnish	Vertical Medium Burnish	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerski Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	4	0	0	0	0	0	4
Surčin	5	0	3	11	0	12	31
Tolvadia	2	0	0	0	0	0	2
Vatin	5	0	2	0	0	0	7
Vršac – S. Ludoš	6	0	1	0	0	0	7
Percentage	Horizontal Smooth	Vertical Smooth	Horizontal Light Burnish	Vertical Light Burnish	Horizontal Medium Burnish	Vertical Medium Burnish	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stubarlija	100%	0%	0%	0%	0%	0%	100%
Surčin	16.1%	0%	9.7%	35.5%	0%	38.7%	100%
Tolvadia	100%	0%	0%	0%	0%	0%	100%
Vatin	71.4%	0%	28.6%	0%	0%	0%	100%
Vršac – S. Ludoš	85.7%	0%	14.3%	0%	0%	0%	100%

II.VII Surface Colour

Belegiš I Interior Surface Colour Frequencies

Count	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0	6	1	0	7
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	1	15	0	1	17
Surčin	0	38	3	0	41
Tolvadia	0	5	0	0	5
Vatin	0	18	0	0	18
Vršac – S. Ludoš	0	21	1	0	22
Percentage	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	85.7%	14.3%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	5.9%	88.2%	0%	5.9%	100%
Surčin	0%	92.7%	7.3%	0%	100%
Tolvadia	0%	100%	0%	0%	100%
Vatin	0%	100%	0%	0%	100%
Vršac – S. Ludoš	0%	95.5%	4.5%	0%	100%

Belegiš II Interior Surface Colour Frequencies

Count	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	3	0	1	4
Surčin	0	9	10	12	31
Tolvadia	0	2	0	0	2
Vatin	0	6	1	0	7
Vršac – S. Ludoš	0	6	1	0	7
Percentage	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	75%	0%	25%	100%
Surčin	0%	29%	32.3%	38.7%	100%
Tolvadia	0%	100%	0%	0%	100%
Vatin	0%	85.7%	14.3%	0%	100%
Vršac – S. Ludoš	0%	85.7%	14.3%	0%	100%

Belegiš I Exterior Surface Colour Frequencies

Exterior Count	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0	6	1	0	7
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	1	15	0	1	17
Surčin	0	38	3	0	41
Tolvadia	0	5	0	0	5
Vatin	0	18	0	0	18
Vršac – S. Ludoš	1	20	0	1	22
Exterior Percentage	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	85.7%	14.3%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	5.9%	88.2%	0%	5.9%	100%
Surčin	0%	92.7%	7.3%	0%	100%
Tolvadia	0%	100%	0%	0%	100%
Vatin	0%	100%	0%	0%	100%
Vršac – S. Ludoš	4.5%	90.9%	0%	4.5%	100%

Belegiš II Exterior Surface Colour Frequencies

Exterior Count	Orange	Brown	Grey	Black	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	4	0	0	4
Surčin	0	11	19	0	31
Tolvadia	0	2	0	0	2
Vatin	0	5	1	1	7
Vršac – S. Ludoš	0	7	0	0	7
Exterior Percentage	**Orange**	**Brown**	**Grey**	**Black**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	100%	0%	0%	100%
Surčin	0%	35.4%	61.3%	0%	100%
Tolvadia	0%	100%	0%	0%	100%
Vatin	0%	71.4%	14.3%	14.3%	100%
Vršac – S. Ludoš	0%	100%	0%	0%	100%

II.VIII Firing Practice

Belegiš I Firing Frequencies

Count	Oxidised	Reduced	Single Core	Rye No. 14	*Total*
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0	1	3	0	4
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	1	1	1	0	3
Surčin	0	0	27	2	29
Tolvadia	0	0	3	0	3
Vatin	0	0	13	0	13
Vršac – S. Ludoš	0	1	11	0	12
Percentage	**Oxidised**	**Reduced**	**Single Core**	**Rye No. 14**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	0%	25%	75%	0%	100%
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	33.3%	33.3%	33.3%	0%	100%
Surčin	0%	0%	93.1%	6.9%	100%
Tolvadia	0%	0%	100%	0%	100%
Vatin	0%	0%	100%	0%	100%
Vršac – S. Ludoš	0%	8.3%	91.7%	0%	100%

Belegiš II Firing Frequencies

Count	**Oxidised**	**Reduced**	**Single Core**	**Rye No. 14**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0	0	3	1	4
Surčin	0	0	3	13	16
Tolvadia	N/A	N/A	N/A	N/A	N/A
Vatin	0	1	2	1	4
Vršac – S. Ludoš	0	0	2	0	2
Percentage	**Oxidised**	**Reduced**	**Single Core**	**Rye No. 14**	***Total***
Belegiš-S.Gumno	N/A	N/A	N/A	N/A	N/A
Ilandža	N/A	N/A	N/A	N/A	N/A
Kaluđerske Livade	N/A	N/A	N/A	N/A	N/A
Karaburma	N/A	N/A	N/A	N/A	N/A
Stubarlija	0%	0%	75%	25%	100%
Surčin	0%	0%	18.7%	81.3%	100%
Tolvadia	N/A	N/A	N/A	N/A	N/A
Vatin	0%	25%	50%	25%	100%
Vršac – S. Ludoš	0%	0%	100%	0%	100%