

1 INTRODUCTION

Pottery tends to arouse strong emotions in archaeologists: they either love it or hate it.

(Orton et al. 1993: 3)

Orton, Tyers and Vince (1993) are quite right about the archaeologists' stance on pottery sherds: you either love them or hate them – there is no middle ground. Thus, some archaeologists see pottery sherds as an unlimited source of information, and they are captivated as they study each and every fragment, while others deem those fragments to be a distracting factor during an archaeological dig and a black hole during the post-excavation processing (Orton et al. 1993: 3). The processing of pottery finds is part of regular archaeological work for most archaeologists, or at least for those who take an active part in archaeological excavations. Irrespective of their preference for a period, material or type of artefact, most archaeologists come across at least some primary processing of pottery finds when they compile their reports after the completion of an archaeological excavation. For the rest of us, whose interest goes beyond primary processing, pottery sherds provoke ardour, as we slowly discover hidden and often invisible messages contained in a pottery vessel, conscious of the unlimited possibilities of its processing and interpretation. We put together pieces of information as if piecing together a jigsaw puzzle, as though we were participating in the creation of the pottery vessels and entering the lives of the people who made them. In archaeology, those patterns of human behaviour are best visible in objects of everyday use: that is, in objects which are products of human activity and which have played active roles in the creation of meanings and traditions. Thus, it is important to keep reminding ourselves that pottery vessels – just like any other products which were part of past human activities – were produced and used in a social context, that they form a part of social and cultural interactions, and that they can only be observed, analysed and interpreted as such.

Potters have always produced ceramic vessels with their users in mind, and they have adapted to the socioeconomic requirements of their communities. The choice of raw material, tempers, techniques and shapes depends on a range of interrelated factors which together create a chain of operations in the production of the pottery. Pottery technology has not changed much since prehistory, as testified to by a number of ethnoarchaeological studies made on modern-day traditional communities. It is precisely this long technological tradition, which can be followed over thousands of years, that enables us to compare, verify and link patterns of human behaviour and elements of material culture within the framework of ethnoarchaeology and experimental archaeology. Such an approach is extremely valuable and necessary for our understanding of past archaeological processes.

Both in prehistory and today, the technology of pottery production can best be understood as a social tradition – that is, a set of technological practices historically linked through time and space, where knowledge and experience are inherited through social learning (Jordan & Zvelebil 2010a: 51). Every potter develops his personal style, his identification stamp, which is a part of his social identity, and is conditioned by traditional legacy, the socioeconomic needs of his community, or environmental factors (availability and type of raw material). If we want to identify, absorb and understand patterns of human behaviour in the past, our task is not only to describe, analyse and preserve archaeological artefacts, but also to try to explore, interpret and understand the

knowledge, skills and conditions which made it possible for those artefacts to be created. With this in mind, pottery should not be seen merely as objects made of clay and used for storing/serving/cooking food, but rather as 'objects' which carry within them a whole network of social relations. People were making, using, distributing, breaking and discarding ceramic vessels within the context of their everyday lives. Archaeologists find potsherds within one of those five archaeological situations; it is our methodological task to identify them during our research, with a view to collecting as much data as possible that will help us interpret the lifecycle of a vessel within the framework of its social, economic, political or religious life. Therefore, pottery should form a frame for exploration of human behaviour in the past, and not just for determination of chronological attributions. It is our link to times past, and it represents a moment in time. That moment carries within itself answers to some questions concerning the functioning and organization of the society, and it slowly introduces us to the uncovering of the social dimension of past human behaviour.

The technology of pottery production is a process, very complex and not in the least simple, which demands that a potter, or a group of potters, perform a range of interlinked and well-thought-out activities. The first part of this book is dedicated to these activities: that is, to production phases and technological choices that potters make, thus influencing the final appearance and functional properties of ceramic vessels. If we made a survey and asked whether pottery making belonged among simple tasks or hard ones, I believe the majority of respondents would answer without giving it much thought: simple. The intention of this book is to convince the readership that the opposite is true, because making ceramic vessels is not a simple activity. I am sure that most archaeologists believe they could make a pottery vessel without any problems. However, it is one thing to turn a lump of clay into a simple shape, capable of holding our stationery, and a completely different thing to make a vessel which has to sustain mechanical damage and big changes in temperature and remain impermeable for as long as possible. J. M. Skibo (1995) was right when he stated that cooking pots were a "sophisticated technological achievement".

Pottery has been the subject of more texts than any other archaeological artefact. Technological aspects, production system, specialization of the craft, product functions, and recycling are just some of the facets that are addressed in analyses of ceramic material and approached by archaeologists using various analytical techniques, methods and theoretical frameworks. We can say that analysis of ceramic material has been one of the fastest-growing areas of archaeological and ethnoarchaeological research over the past 40 years. Many archaeological, ethnoarchaeological, archaeometric and experimental studies have focused on the function, style and origins of pottery (For an overview, see Rice 1996) and its composition and production (For an overview, see Rice 1996a). What is common to all of them is the fact that pottery is very important for the interpretation of cultural, social, economic, spatial and chronological aspects. The analysis of ceramic material is actually the best example of the interdisciplinary nature of archaeology, and in view of the large quantity of data, methods and analyses, it has been given a special name: "ceramology" (Buko 2008).

Generally speaking, ceramological research can be divided into three main fields: production, use and pottery stratification processes. For each of these there are six questions that archaeologists endeavour to answer: *when?*, *where?*, *how?*, *how much?*, *why?* and *who?*. Taken together, these questions and the corresponding answers form the framework for all ceramological studies (Buko 2008: 15). The processing of material recovered from two Vučedol sites was an attempt to provide answers to some of those questions, and the relevant results are presented in the second part of this book. Such an approach required an interdisciplinary research which involved:

- 1) typological processing of pottery finds on the basis of their morphological characteristics;
- 2) descriptive statistics compiled using the *SPSS* program (*Statistical Package for the Social Sciences*);
- 3) defining models of pottery production which include craft specialization, product standardization and organization of the production (with a statistical test using the coefficient of variation, a standard statistical method applied when defining product standardization);
- 4) a technological segment complemented by mineralogical-petrographic analysis and X-ray powder diffraction (XRD);
- 5) the functional component of pottery vessels being interpreted using the results of gas chromatography-mass spectrometry (GC-MS) analysis;
- 6) the economic segment of the Vučedol community, which includes the agricultural and economic activities and dietary habits of its population, being complemented by archaeobotanic and osteological analyses;
- 7) both settlements being dated in absolute terms using ^{14}C analysis.

The book is purposely divided into two parts. The first part consists of an overview of analytical techniques and theoretical frameworks about pottery technology, and of parameters for processing pottery finds. Given that a similar review does not exist in the Croatian archaeological literature, my hope is that this book will be useful to students for their individual work on processing and analysing ceramic material, and that it will inspire them to come up with new ideas and reflections on pottery.

The English translation of the Croatian text can be found at the end of the book. It contains the same tables and graphs, only in English, since data contained therein form an integral part of the text. The illustrations are not repeated in the English version, but are presented with bilingual captions, while the text contains references to their numbers and corresponding page numbers.

The second part brings the results of analyses performed at two Vučedol sites in the area of Vinkovci: Ervenica, in Vinkovci, and Damića Gradina, in Stari Mikanovci. It is part of the doctoral thesis *Late Vučedol Culture in the Bosut Valley on the Basis of Pottery Finds*. Some segments of the thesis have been published in Croatian and international journals (Miloglav 2011; 2012a; 2012b; 2013; 2014; 2015), and presented at scientific conferences.

Given that the second part of the book is interdisciplinary, there are several colleagues I am indebted to for analyses they performed and for their interpretation. Dr Marta Mileusnić, of the Faculty of Mining, Geology and Petroleum Engineering of the University of Zagreb, and student Kristijan Bakarić, made a mineralogical-petrological analysis of pottery sherds from both sites, and XRD analysis. Dr Tajana Trbojević-Vukičević, of the Faculty of Veterinary Medicine of the University of Zagreb, analysed and interpreted animal bones from the site at Ervenica, while Dr Kelly Reed of the University of Leicester processed the archaeobotanical finds from the same site. My deep gratitude goes to the staff of the Department of Archaeology of the Vinkovci Town Museum, particularly to Maja Krznarić Škrivanko, for making available the finds and documentation on the two sites. I am especially grateful to my colleague and friend Krešimir Rončević for the beautiful plates of drawings and illustrations contained in this book, but most of all for his support and advice. I am obliged to several colleagues and friends for their technical assistance, useful suggestions, inspirational discussions about potsherds and their support during the writing of this book: Andreja Kudelić, Jasna Vuković, Prof. Tihomila Težak-Gregl, Martina Rončević and Maja Ukas. And finally, my biggest thanks go to Mato and Lovro for their patience and support.