

Foreword

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Introduction

Author(s): Esa Hertell & Mikael A. Manninen

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MESOLITHIC INTERFACES

VARIABILITY IN LITHIC TECHNOLOGIES IN EASTERN FENNOSCANDIA

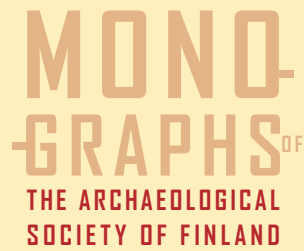


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THE ARCHAEOLOGICAL SOCIETY OF FINLAND

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THE ARCHAEOLOGICAL SOCIETY OF FINLAND



Tuija Rankama

Esa Hertell & Mikael A. Manninen

Esa Hertell & Miikka Tallavaara

Jarmo Kankaanpää & Tuija Rankama

Aivar Kriiska, Esa Hertell & Mikael A. Manninen

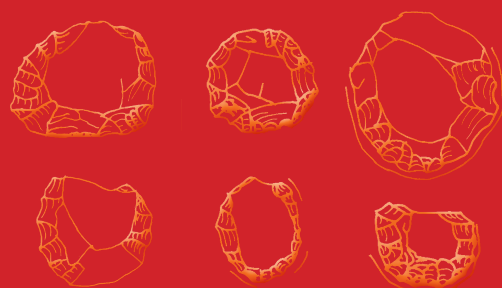
Esa Hertell & Miikka Tallavaara

Mikael A. Manninen & Esa Hertell

Mikael A. Manninen & Kjell Knutsson

Mikael A. Manninen & Miikka Tallavaara

Tuija Rankama & Jarmo Kankaanpää



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Editorial assistant: Mikael A. Manninen

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Foreword

Tuija Rankama

This book brings together results of the *Interfaces in the Mesolithic Stone Age of Eastern Fennoscandia* project. The project took shape in 2003 in discussions about the specific interests of the core members of the Lithic Studies Group at the University of Helsinki: Esa Hertell, Mikael A. Manninen, Tuija Rankama, and Miikka Tallavaara. It became clear that much of the research in progress or on the planning board had to do with different kinds of interfaces during the Mesolithic: geographical, geological, chronological, and cultural borders, as well as, importantly, the interface between technology and society. The group felt that for a number of reasons these could best be studied through lithic artefacts, which became the foci of the original research plan and remain the key element of this final publication.

Lithic artefacts have the advantage of being an abundant find category in Stone Age sites. Stone tools and waste are also virtually indestructible and therefore easy to recover in archaeological excavations. From a technological point of view, the most important characteristic of lithic assemblages is the fact that they derive from a reductive process: instead of building an artefact from smaller constituents, stone tools are manufactured by removing material from a blank. Due to its indestructibility, the removed material is preserved at the manufacturing site, which allows the archaeologist to reconstruct the manufacturing process. As human behaviour, this is influenced by its social context. A study of lithic technology is, thus, by definition, a study of human society. This book reflects that fact throughout its papers.

Not all of the research carried out by the *Interfaces* project is included in this publication. Some of it has been published separately, for example the results of our quartz knapping experiments (Tallavaara & al. 2010). As often happens in scientific projects, the



research has also branched out and formed new projects. A notable example of this is the Lapland Pioneers project currently funded by the Academy of Finland. It grew from the discovery of the Sujala site in 2002, and my part of the early research of the site was funded by the *Interfaces* project. As the research expanded and additional funding was obtained, the project became independent and began to publish on its own. Some of the results of the research have been included in this volume; more will be published as the work continues.

The contents of this book will be discussed briefly in the introductory chapter. What remains now is to thank those who have helped us complete this research and book project. Since so many people have been involved in the various research endeavours, each paper has its own set of acknowledgements. For the part of the whole *Interfaces* project, we first wish to thank the Finnish Cultural Foundation, who had enough faith in us to sponsor us for three consecutive years. We hope that this book proves that their faith was not totally ill-founded.

Throughout its existence, the *Interfaces* project has benefited from the help and support of the project advisory group: professor Douglas D. Anderson (Brown University), professor Sheila Coulson (University of Oslo), professor emeritus Richard A. Gould (Brown University) and professor Kjell Knutsson (Uppsala University). We sincerely thank them for everything they have done to help us along.

To ensure the scientific value of the papers in this book, each of them was reviewed by two esteemed referees. We are extremely grateful for the trouble they took in helping us make the book better. Our sincere thanks go to (in alphabetical order) Jan Apel, Hein Bjartmann Bjerck, Christian Carpelan, Sheila Coulson, Killian Driscoll, Berit Valentin Eriksen, Richard A. Gould, Ole

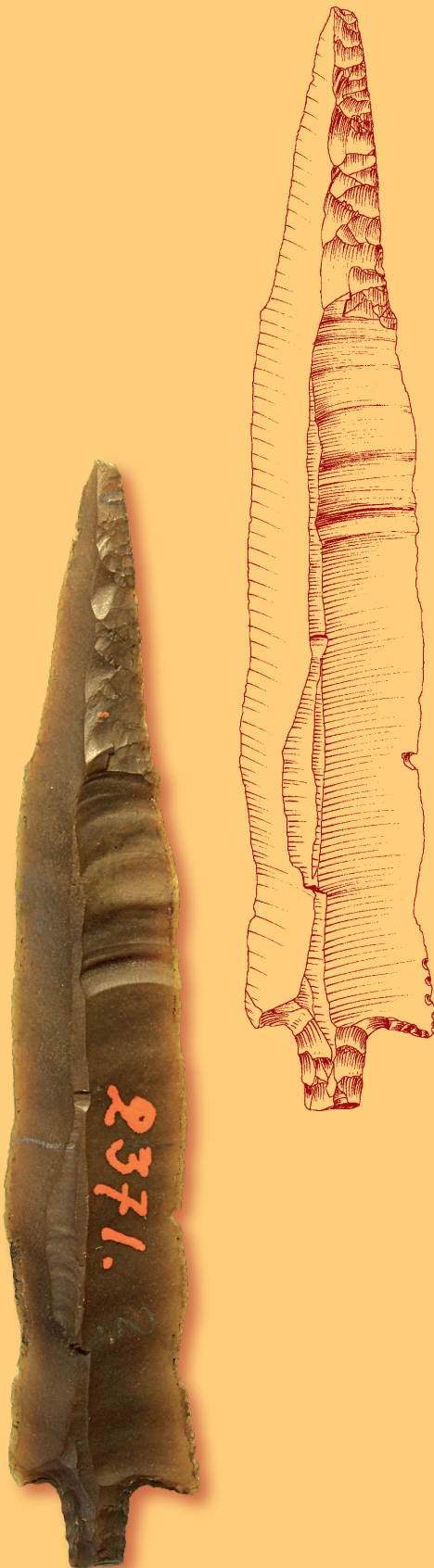
Grøn, Petri Halinen, Bryan Hood, Jarmo Kankaanpää, Helena Knutsson, Heikki Matiskainen, Felix Riede, Mikkel Sørensen, and Mikhail Zhilin. It should be noted that, although the above list includes a few authors or spouses of authors, they, of course, did not review papers by close relations. In addition to the outside readers, the members of the *Interfaces* project have been each other's harshest critics – but also firmest supporters.

Some of the research included would not have been possible without the participation of scholars outside the core of the *Interfaces* project. We are very grateful to Jarmo Kankaanpää, Kjell Knutsson, and Aivar Kriiska for their indispensable contributions.

The wonderful layout and graphic design of the book (and some quirky illustrations) are the work of graphic designer-turned archaeologist Mikael Nyholm, who joined the book project fairly early and whose help and suggestions were invaluable for the end product. We thank him most sincerely! We also want to thank the Finnish Archaeological Society for agreeing to include the book in their publication programme and letting us design it the way we wanted.

Finally, as the leader of the *Interfaces* project and the Lithic Studies Group I want to thank the other members for the thirteen years we have worked and studied together. It has been a remarkable journey and a wonderful privilege to follow the development of talented students into full-fledged archaeologists and excellent researchers. Thank you, guys!

Veikkola, on the verge of spring, AD 2011
Tuija Rankama



Introduction

Esa Hertell & Mikael A. Manninen

The project *Interfaces in the Mesolithic Stone Age of Eastern Fennoscandia* was designed to study Mesolithic stone tool technologies in eastern Fennoscandia. As simple and straightforward a goal as that may sound at first, some words about the history of the project, the original and fulfilled goals, and the evolution of ideas may be a good starting point for this book. We hope that this helps in placing the book in its context as a part of Fennoscandian archaeology.

The foundation of the project was laid when Tuija Rankama started a volunteer study group on lithic technology at the University of Helsinki in the late 1990s. At that time, the discipline of archaeology as taught at the University of Helsinki provided relatively little formal training on the methods of analysing archaeological materials. Courses on prehistoric archaeology included mainly information on artefact typology, e.g., on ground stone tool types and pottery styles, and on the spatio-temporal distribution of types, rather than on the technological processes of manufacture and on the way this information could be utilised to draw inferences about the past. Due to the small number of working archaeologists and the nature of chipped quartz assemblages in Finland, local stone tool studies had concentrated on ground stone tools while the potential of chipped lithics was somewhat undervalued in comparison to other artefact classes. Students were acquainted with chipped lithics and basic flaking methods through passing references during courses on local and world archaeology, when basic types of stone artefacts, e.g., blades, hand-axes, and Levallois cores, were briefly touched upon.

The newly formed group concentrated on lithic technology and on the study of chipped quartz, the main lithic raw material in Stone Age Finland. The course

also provided new insights into archaeological materials in general, as concrete artefacts were incorporated into the larger theory/ies of hunter-gatherer archaeology. We suspect that this was soon realised by many of those later-to-become-archaeologists who took part in the study group. The issues discussed were new to us and the way things were approached and dealt with was also somewhat different from other courses. The lithic studies group had a continuity that was not available in other university courses that typically lasted only for a short semester. The group also provided a contact network where it was possible to discuss archaeological questions on a shared platform.

This was also the platform on which a project to study the Mesolithic was later launched. We decided to work with the Mesolithic, as the products of stone tool technology formed the major part of the artefact record of the period. Furthermore, interest in the Mesolithic had been growing since the late 1980s among Finnish researchers, but research on the material was, and still is, greatly underrepresented as compared with other periods. At the same time, we were already working with the Mesolithic in other connections. A common project thus provided a means to combine all the existing efforts. An application was written to the Finnish Cultural Foundation, and the Foundation showed a green light.

The original goal of the project was to study Mesolithic stone tool technology in spatially discrete case areas. What was aimed at was a relatively long band of individual research areas reaching from Estonia to northernmost Finland. This is a rather large area: the distance from southernmost to northernmost Finland alone exceeds 1000 kilometres. The idea was to collect information about technological variation and the

possible causes of the variation in the different case areas. We hoped that this would form a framework of models that could be tested and/or built upon in later studies – a sort of backbone for future research. The original idea was partly maintained in the subsequent work and some chapters of the book discuss the original case areas.

The spatial dimension was the result of our earlier work and interests. Before the project was launched, we were already working in different areas. Tuija Rankama had been working in Lapland, i.e., in northern Finland, since the eighties, and Mikael A. Manninen was also working in the same area. Mikael and Esa Hertell had been involved in studies in Estonia with Aivar Kriiska. Results of research in these areas are available in this book. Further case areas in southern Finland and the northern Satakunta–southern Ostrobothnia region were included in the original project design and work in the area was carried out, but this research did not reach the current book.

As the name of the project indicates, another central theme in the original plan was to study *interfaces*. An *interface* was understood as a border zone, whether it be geographical, geological, chronological, cultural, or other. The idea was to study how these interfaces may have affected lithic technology. For example, the geological zone where sedimentary rocks and crystalline bedrock meet, i.e., the flint to quartz interface, as well as border zones between established archaeological cultures, were areas of interest to the project.

During the course of the research, the project goals shifted somewhat from the original area and interface-specific research to include questions addressing other problems, as well as general variation in stone tool technologies. It would be unwise to argue that a situa-



tion where project goals are drifting is ideal. Nevertheless, we feel that this freedom of a wandering mind gave us an opportunity to enhance our thinking and made us elaborate our research. We like to believe that changing goals in the course of the work helped us to accomplish research that would not have been possible in the beginning, or with the original plan.

A major part of contemporary research on stone tool technologies revolves around the question of how to extract information about the life of past societies by studying processes and patterns behind the lithic artefacts. When dealing with hunter-gatherers, as we are in this book, we want to know how stone tools and their manufacturing waste mirror the whole spectrum of past life-ways. What we are studying through the analyses of lithic materials are the spatial, temporal, and structural aspects of past societies, such as social contacts and organisation, land use and settlement systems, hunter-gatherer mobility, and the mechanisms behind the spread of ideas and innovations. Taken together, this means the anthropology of past people, that is, the sort of archaeology that generally has been and still is seen as the goal of archaeology as a discipline since the 1960s. In one way or another, this is the main orientation of most contemporary archaeologists, and the one we have adopted in this book.

Despite the general trend, there is today a great deal of variation in the way archaeologists conduct their research and in the questions they address. This book makes no exception. The questions that are asked,

the theoretical and methodological approaches, and the philosophical orientation of the individual papers vary greatly. For this reason, it was soon decided that a holistic approach to the study of stone tools was the best option for the project to proceed. By *holistic* we mean the spectrum of questions, interests, and approaches, as well as the range of varying analytical methods in the analysis of the lithic record. The authors were free to choose the topics of greatest interest to them for the eight articles that are included in this book.

In the first paper, Hertell and Tallavaara study hunter-gatherer mobility and the spread of exotic lithics to southern Finland during the Early Mesolithic in a behavioural ecological framework. They find that exotic lithics were exchanged between hunter-gatherer groups, and provide an explanation for the diachronic patterning in archaeological data that emphasises the evolutionary dimension of human life in low population density conditions.

Kankaanpää and Rankama adopt a site-based view and conduct an intra-site spatial analysis to study hunter-gatherer lithic technology and spatial organisation at the Early Mesolithic Sujala site. They demonstrate the presence of four different clusters of finds representing distinct combinations of technologically diagnostic artefacts at the site, and discuss how these individual features can be related to past structures and indoor and outdoor activities.

The paper by Kriiska and co-workers presents and discusses lithic raw material economy, using a set of site assemblages from the Pärnu region in Estonia. They explore the methods of primary production at Mesolithic and Neolithic sites and suggest that many technological features can be linked to small raw material package size. They also show that when the availability of raw material changed, technological processes were adapted accordingly.

Manninen and Hertell provide a survey of flint and chert blades and blade related finds from Finland and discuss the spatial and temporal position of the arte-

facts in the archaeological record. They show that blade artefacts are found all over the country although they concentrate in specific areas. Most of the finds in the database can be dated to Mesolithic, but younger artefacts are also present.

In their second paper, Hertell and Tallavaara explore the organisation of Mesolithic core technology in north-eastern Europe. They discuss how the variation in core technology can be linked with hunter-gatherer mobility, and conclude that specific core technologies correlate with indicators of mobility and site use. They also suggest that long term changes in the organisation of hunter-gatherer mobility led to the restructuring of lithic technologies over time.

In two papers, Manninen, with Knutsson and Tallavaara, respectively, studies and discusses unifying factors and variability in Mesolithic margin-retouched arrowheads in Finland as well as other parts of northern Europe. Manninen and Knutsson provide a survey of inland sites with oblique points in northern Finland, Norway and Sweden. They conclude that the inland sites with oblique points date from the Late Mesolithic, and suggest that these points are part of a single technological tradition that spread over the whole of northern Fennoscandia. Manninen and Tallavaara elaborate on this result and compare technological details in two populations of margin-retouched points from different parts of Finland using the theoretical framework of cultural evolution. They find differences between the two point populations, as well as in within-population variability, and conclude that these differences are related to the mechanical properties of the different raw materials used to produce the points. They also show that, in the light of the current data, the oblique point tradition appears to have spread from the north to the south in Finland, and suggest that cultural change in this case was triggered by major environmental changes.

Rankama and Kankaanpää utilise the *chaîne opératoire* concept to conduct a detailed analysis of the Late Mesolithic quartz technology at the Kaaraneskoski site in southern Finnish Lapland. The study includes tech-



nological, use-wear, and spatial analyses that are supplemented with artefact-typological and fracture analyses. The results enable, among other things, a discussion of cultural affiliation and contacts, Late Mesolithic mobility patterns, and site structure.



These articles contribute to the study of the early postglacial colonisation of northern Europe, hunter-gatherer mobility, technological variability in lithic technologies, the impact of raw material properties and availability on hunter-gatherer technological organisation, and the archaeological cultures of eastern Fennoscandia in general. In line with the original plan of the project, the book also provides new data, i.e., technological details, metric data, chronometric dates, and evidence of site structures and intra and inter-site spatial patterns. We hope that the articles will be useful to scholars interested in similar questions, and that the book will stimulate new questions and serve as a reference source for future studies. Hopefully it will be of use not only to those of us working with the Mesolithic or the Stone Age, but to all archaeologists and also to the general public.