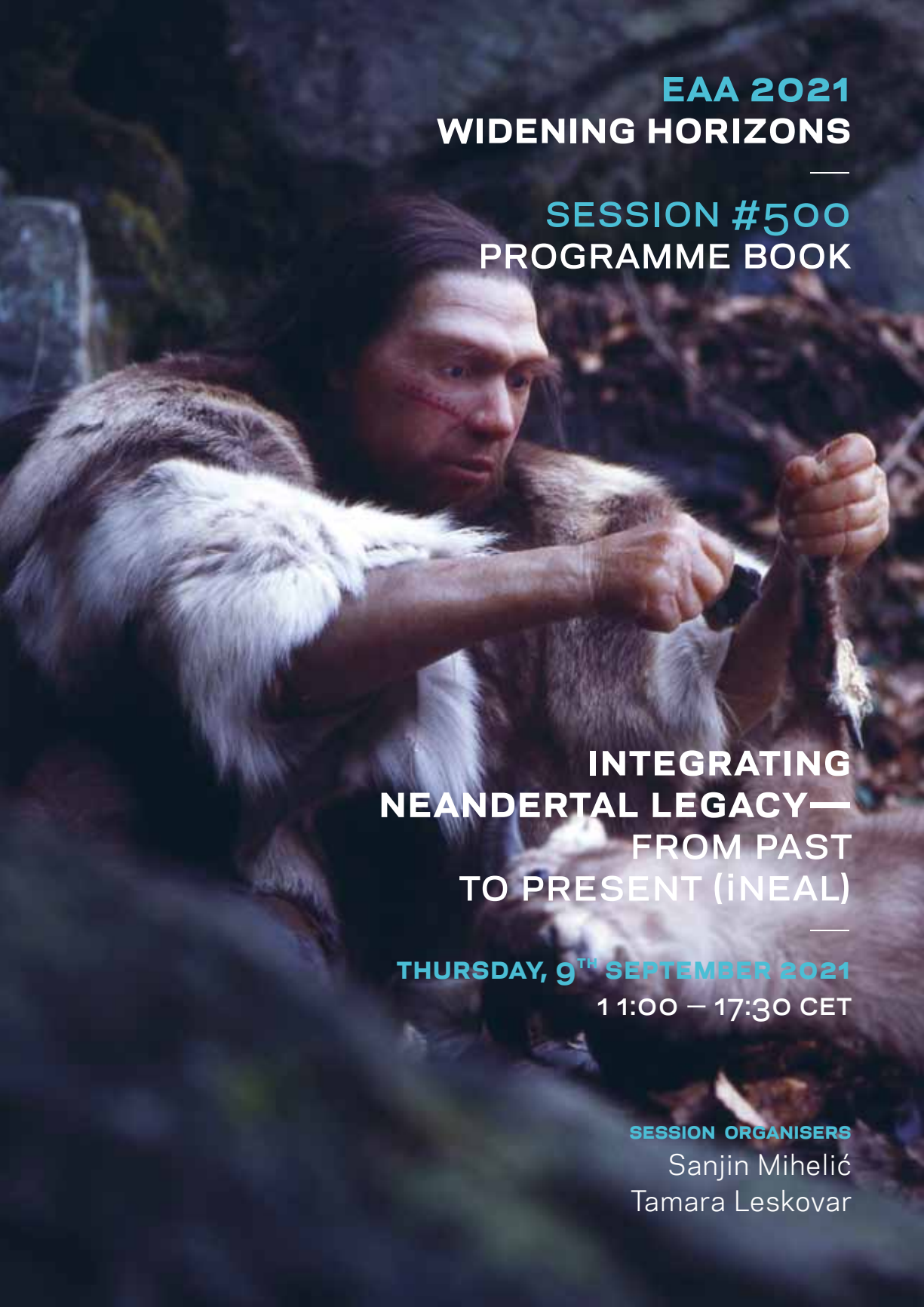

EAA 2021
WIDENING HORIZONS

SESSION #500
PROGRAMME BOOK

INTEGRATING NEANDERTAL LEGACY— FROM PAST TO PRESENT (iNEAL)

THURSDAY, 9TH SEPTEMBER 2021
11:00 – 17:30 CET

SESSION ORGANISERS
Sanjin Mihelić
Tamara Leskovar

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The aim of this session is to foster dialogue among Neandertal scholars from different countries and disciplines. This intention had been declared already in our initial call for papers, in which we appealed for contributions that offer proactive, realistic and feasible solutions leading to synergistic effects in research and valorisation of Neandertal heritage. As this programme booklet will presumably make readily obvious, the response has been excellent – the session consists of 14 papers and 2 posters covering a breadth of specific topics, contributed by a total of nearly 40 scholars from all parts of our continent!

The session is entitled *Integrating Neandertal Legacy: From Past to Present* for a very sound reason – in a nutshell, this title at the same time doubles as the name of a project–or action–organized within the COST Programme (*European Cooperation in Science & Technology*), which is funded by the Horizon 2020 Framework Programme of the European Union. This action, abbreviated as *iNEAL*, has of 2020 brought together a respectable number of researchers and practitioners from different areas and fields, as well as countries and institutions, with the sole aim of creating a vibrant inter- and transdisciplinary network of Neandertal scholars. The Kiel session–even if reduced to an online variant only, despite hopes for the contrary–is in fact an event organized by the *iNEAL* Action with participation of experts beyond the action, in cooperation with the *Palaeolithic and Mesolithic Community of the European Association of Archaeologists*.

We hope you will enjoy the *iNEAL* Session and engage in a lively discussion!

Sanjin & Tamara

Neandertals are the first human population that can be truly recognized as pan-European phenomenon. Since the discovery in a small cave in the Neander valley in Germany in 1856 (thus giving us both scientific and colloquial name for this ancient group of humans) the sites with their skeletal remains and/or cultural finds have been discovered all over Europe (and parts of Asia) and cover a period of more than 250 000 years. This resulted in a vast accumulation of various types of data.

However, in over the 150 years of Neandertal research, scientific methods, technological and methodological aspects, theory and practices developed often at a different pace, and sometimes in different trajectories, in different countries. The result is that it is often difficult to evaluate and compare various datasets dealing with Neandertal legacy.

Likewise, for numerous reasons there are problems related to access to data and information for various sites and finds. In addition, research questions asked by different groups and scholars from not only different disciplines, but sometimes from same disciplines but different traditions and different countries often are difficult to compare, even if their goal may be the same. Recent decades saw a rapid rise in communication of scientists from, for example, former "Eastern" and those from the "Western Bloc". However, this is very much still based on individual connections and related to specific analyses and work. Thus, in order to compare data on various aspects of Neandertal legacy from Europe, it is crucial to build a long-term network of scientists that, in turn will help create a usable and inclusive, inter- and multidisciplinary database and data sharing platform for all interested in Neandertals.

In addition, iNEAL Action will promote dialogue between scientists (with special attention given to early career investigators), and invite scientists from all relevant fields and disciplines, beyond the core group (such as scientists interested in dating methods and chronology, paleoenvironmental analysis, palynology, trace analysis etc.). In such a way, datasets will be created with a specific purpose of inclusiveness, thus providing data from various disciplines that can be incorporated to create a more detailed picture of Neandertals in temporal and spatial dimensions.

Another important aspect of the iNEAL Action is promoting awareness among various stakeholder groups of the importance of Neandertal heritage as an asset in education, tourism as well as other broader socio-economic spheres. At present, a lot of effort is being invested in research, presentation and interpretation of Neandertal heritage sites and other tangible remains like museum exhibits, however, there is a palpable lack of networking at higher-order levels, as well as across the stakeholder spectrum, which this Action aims to remedy. The intention is to build on the existing initiatives, including localized success stories in the heritage sector, like the Mettmann Neanderthal Museum, or the Krapina Neanderthal Museum, as regards musealised sites or interpretative centres and museums, to collaborative endeavours like the Ice Age Europe platform, which brings together a number of partners across Europe, even if its remit is somewhat broader in terms of temporal extent. What all these efforts are lacking is the inclusion of stakeholders other than academia, i.e. those that would create a more tangible link with real life: local communities, local and regional governments, private sector, SME's, tourism sector etc., who have long been disenfranchised in matters of management of archaeological heritage in general, and Neandertals in particular. In education, primary and secondary-school curricula in many countries might greatly benefit from more elaborate and school-children friendly didactic tools, which are at the core of the Action's agenda.

In summary, iNEAL will bring together a wide variety of researchers, both from different countries, as well as from different fields of research in order to:

1 get a more detailed and much broader insight into various aspects of Neandertals (biology, including genomics, cultural aspects, geographic, environmental settings etc.) across space and over time;

2 create a data sharing platform, making it easier to detect data of interest, as well as identifying major gaps, resulting in new research questions, collaborations and projects;

3 stimulate international collaboration of scientists and create a wide network and platform for communication;

4 build a new outreach platform between scientists and scientific research and other interested parties (general public, small and medium enterprises, local communities, tourist workers etc.) creating a positive environment and basis for integrating Neandertal legacy into present;

5 address the career development of early career investigators. Through participation in working groups, a number of short-term scientific missions and training schools, they will get training in various disciplines and develop a firm understanding of specific current practices that will help them in their future research.

THURSDAY, 9TH SEPTEMBER 2021
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SANJIN MIHELIĆ
TAMARA LESKOVAR

EAA KIEL 2021
SESSION

COST ACTION
INTEGRATING NENDERTAL LEGACY — FROM PAST TO PRESENT

1ST BLOCK – 2 HOURS

11:00
Introduction

11:15
Janković, Ivor
COST Action. Integrating Neandertal Legacy, from Past to Present

11:30
Voisin, Jean-Luc *et al.*
A 2.0 Catalogue of Fossil Hominids. Neandertals Moving into the 21st Century

11:45
Röding, Carolin & Harvati, Katerina
Neanderthals. New Insights From Old Bones

12:00
Romagnoli, Francesca *et al.*
A Tentative Summary of Variation in (...) Small Tool Technology Between Neanderthals and Early Sapiens

12:15
Marin-Arroyo, Ana & Rivals, Florent
New Advances in Zooarchaeological Methods Unveil Neanderthal Behaviour

12:30
Dobos, Adrian
Middle Palaeolithic Research in Romania. Drawbacks and Achievements

12:45
Discussion

13:00
Lunch Break

2ND BLOCK – 3 HOURS

14:30
Stefanski, Damian *et al.*
On the Edge of the Ice Sheet. Polish Contribution to the Research on the Neandertal Man

14:45
Lamotte, Agnes & Gil Desmadryl, Thomas
Neandertal Migrations Through Europe and their Legacy in Northern and Eastern France

15:00
Pereira, Telmo *et al.*
Neanderthal Occupation in Western Iberia during the MIS 6. Monte da Revelada

15:15
Discussion

15:30
Auffermann, Bärbel & Schneider, Beate
Holding on. Communication of Content During the Pandemic. The Example of the Neanderthal Museum

15:45
Peeters, Susan & Zwart, Hub
Neanderthal Research, Early Human History and the Issue of Masculinity

16:00
Dielemans, Linda
In the Mind's Eye. Communicating Neandertal Research Through Fiction

16:15
Discussion

16:30
Rodil, Kasper *et al.*
Exploring Opportunities of Cross-border Digital Heritage Applications Using Embodied Interaction in VR Simulations

16:45
Riethus, Anna
Neanderthal Memories. Writing an Audio Game about Neandertals

17:00
Discussion

Mester, Zsolt & Lamotte, Agnes
Long Distance Raw Materials in the MP of Northern Hungary **(poster)**

Lamotte, Agnes *et al.*
Fractured Leafpoints from Sajobabony **(poster)**

18:00
End of Session

EAA KIEL 2021

ABSTRACTS & CVs

COST ACTION: INTEGRATING NEANDERTAL LEGACY: FROM PAST TO PRESENT (iNEAL)

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Neandertals are the first human population that can be truly recognized as pan-European phenomenon. Traces of their cultural and/or skeletal remains can be found in most European countries and cover a period of more than 250 000 years. A lot of scientific work has been done on various aspects of their heritage and there is a vast collection of archaeological and anthropological data available. However, there is still a discrepancy in available and updated datasets from various countries. In addition, communication between scientists from various fields and from various countries is still based on personal connections between individual scientists, mostly related to specific projects. This Action is a long overdue attempt to bridge the geographic, language, disciplinary and data specific gap, as well as a gap created by traditions of different disciplines in different European countries.

Through a combined, scientifically-based and geographically inclusive approach, creation of a growing inclusive database, and promoting dialogue among scientists and creating guidelines for research, a solid base for better understanding of Neandertals can be reached. Further, this will allow a base for inclusion of Neandertal legacy into the present, through scientifically based guidelines for public presentation and further actions for promoting their heritage via inclusion of non-scientific stakeholders, such as administrators, museum and cultural workers, touristic sector, small and medium enterprises and other interested parties.

KEYWORDS

Neandertals, Middle Palaeolithic, Prehistoric Europe, Pleistocene, Cultural Tourism, Public Archaeology

Ivor Janković is a prehistoric archaeologis and paleoanthropologist at the Institute for Anthropological Research in Zagreb, Croatia.

His main interests are biological and cultural adaptation of Middle and Late Pleistocene hominins.

Jean-Luc Voisin

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Jean-Luc Voisin focuses on two topics: the shoulder anatomy within genus *Homo*, with a special interest for the Neandertal one; Neandertals and their relationships with other Hominids.

A 2.0 CATALOGUE OF FOSSIL HOMINIDS: NEANDERTALS MOVING INTO THE 21ST CENTURY. A COMPREHENSIVE KNOWLEDGE REPOSITORY ON THE NEANDERTAL LEGACY

Jean-Luc Voisin[1]
Sorin Hermon[2]
Stefano Benazzi[3]
Anna Degioanni[4]
Irka Hajdas[5]
Tamas Hajdu[6,7]
Katerina Harvati[8]
Ivor Janković[9]
Andrei Dorian Soficaru[10]

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5 Laboratory of Ion Beam Physics, ETH Zurich, Switzerland
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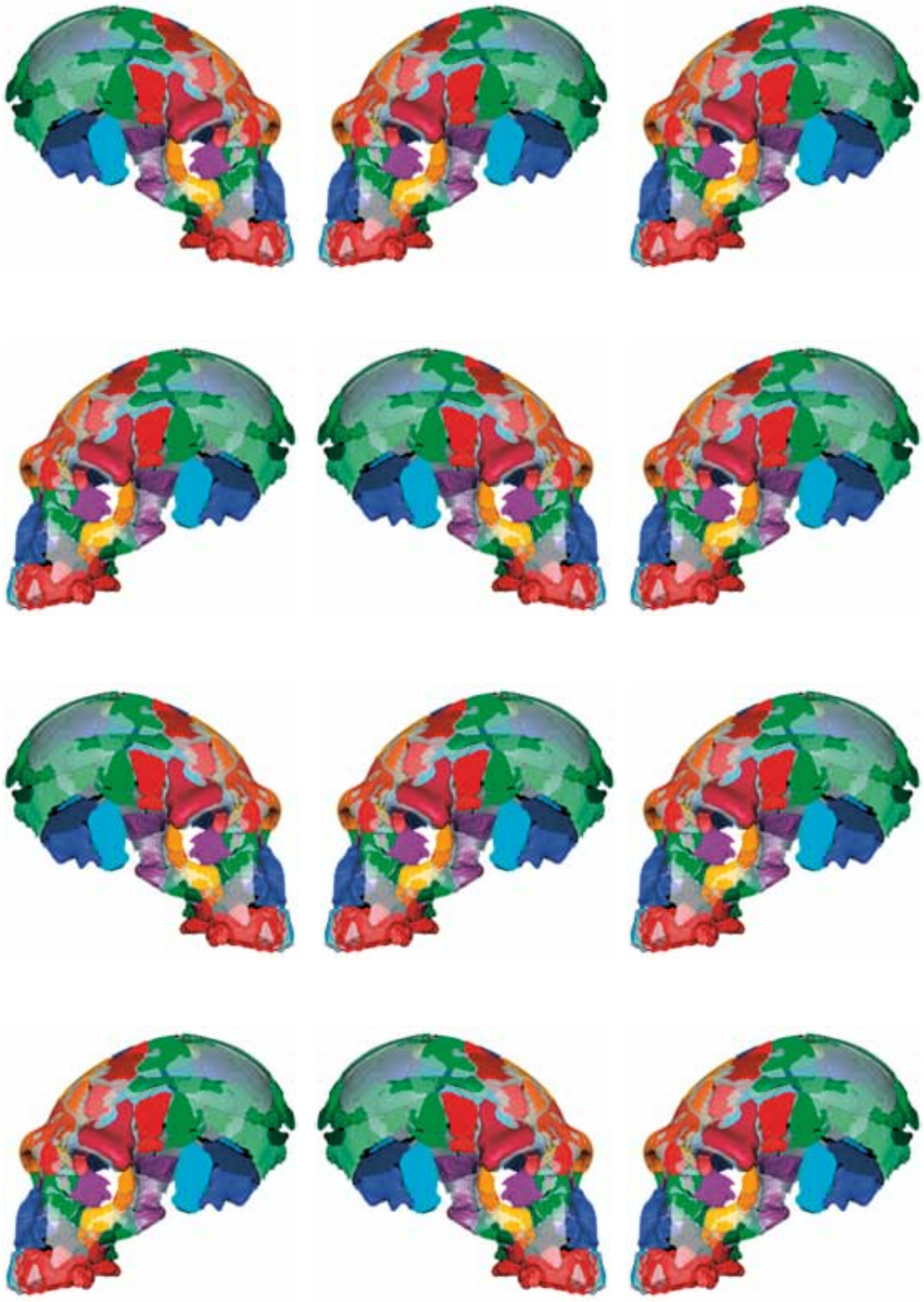
Traces of Neandertal cultural and skeletal remains are found in most European countries, covering a time-span of more than 250,000 years. Since the recognition of Neandertals as a specific human group, following discoveries in the Neander valley in 1856, much works has been taken on many aspects of their heritage (cultural, anthropological, genetic, etc.); human remains and associated artefacts have been discovered since then in large quantities, and new discoveries of recent excavations are published yearly. However, there is still a discrepancy in available datasets from various countries, which often impacts negatively on research, but also on the overall management of Neandertal heritage. The most updated record is still the "catalogue of fossil hominids" published by Oakley and colleagues in .... 1967! The EU funded Neandertal Tools Project was a very promising initiative set in 2004, which however did not succeed to develop a sustainability plan and maintain its developed tools and services and nowadays it is not functional.

The recently launched initiative iNEAL (COST Action 19141) set as one of its primary ambitious tasks (in Workgroup 1) to establish a comprehensive knowledge repository on the Neandertal legacy. Such a repository should include as many aspects related to the study of Neandertals as possible, such as climatological, environmental, chronological data, as well as material culture and skeletal remains. It might also include data about DNA. Data has to be organized in a semantic way and according to the FAIR data principles. As first steps, WG1 of iNEAL aims to gather updated information on Neandertal remains and related research particularly from countries with scarce data so far, followed by work on defining an ontology for the Neandertal legacy, the backbone of the planned knowledge repository.

KEYWORDS

Neandertal, Catalogue of Fossil Hominids, Online database, Europe, Fossil



NEANDERTHALS: NEW INSIGHTS FROM OLD BONES

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When hearing the word Neanderthals most people have a few famous fossils in mind. However, besides well-known, iconic specimens, many less known and sometimes forgotten materials can be found in storage rooms and museum basements. These little known materials have great potential to provide us with new insights about Neanderthals and human evolution in general. Technological improvements of the last decades allow us to analyze even very fragmented and damaged fossils in a comprehensive framework and thereby, to study materials that could not be analyzed in depth at the time of their discovery. The fossil crania from Apidima and the isolated molar from Megalopolis, Greece, are examples illustrating the potential of new analyses of materials excavated decades ago to our understanding of Neanderthal legacy. On the one hand, the virtual reconstruction, direct dating and comparative shape analysis of the Apidima remains overturned previous hypotheses by indicating the presence of an early Homo sapiens population, followed by a Neanderthal one, at this site (Harvati et al., 2019). On the other hand, the previously unidentifiable Megalopolis molar, likely assigned to the Neanderthal lineage through its crown shape comparative analysis, contributes to the scarce Pleistocene human fossil record of Greece (Röding et al., in press). Such re-evaluations of old materials can therefore provide important new insights, and are particularly crucial in cases where new excavations are not always possible, to better integrate our knowledge of the Neanderthal legacy across the European continent.

KEYWORDS

Neanderthals, virtual anthropology, cranial reconstruction, tooth outline analyses, Apidima, Megalopolis

Carolin Röding is a doctoral candidate in the CROSSROADS project at the Eberhard Karls University of Tübingen, Germany. For her doctoral dissertation, she is reconstructing and analyzing Middle-Late Pleistocene hominin crania and teeth from the Mediterranean with special emphasis on the Greek fossil record. Further research interests include hominin variation, the interaction between brain and braincase as well as cranial integration and modularity.

Katerina Harvati

Katerina Harvati is a professor of Paleoanthropology at Eberhard Karls University Tübingen, Germany, specializing in Neanderthal paleobiology, modern human origins and the application of 3-D geometric morphometric and virtual anthropology methods to paleoanthropology. Her broader research interests include primate and human evolution; evolutionary theory; the relationship between the phenotype, genetics, behavior and the environment; and the paleoanthropology of South-East Europe.

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Alvaro Arrizalabaga

Francesca Romagnoli achieved her International PhD in Prehistory in 2012 at the Università di Firenze (Italy) and Universitat Rovira i Virgili (Spain) with honours and European Mention. Her main interest is the knowledge of cultural changes and social dynamics in Palaeolithic hunter-gatherers. She specialises in the study of Pleistocene socio-economic behaviours, stone and shell technology, primarily in European Neanderthals. She developed two main research lines: the site formation processes and the diversification of productions as adaptive behaviour making seminal contributions in these fields about recycling, technological diversity and innovation.

Recently, she expanded her research lines dealing with Cognitive Archaeology. She was recipient of a Marie Curie Individual Fellowship, a Wenner-Gren Grant and CNRS Grants within the International Research Network of Taphonomy. She is currently a PhD Assistant Professor of Prehistory at the Universidad Autónoma de Madrid in Spain.

Alvaro Arrizalabaga graduate (1988) in Geography and History, Master in Archaeological, Historical and Artistic Heritage (1992) and PhD in History (1995) in the University of the Basque Country. Since 1995, lecturer of Prehistory (Full Professor since 2018). He has been academic secretary of the Department of Geography, Prehistory and Archeology, Vice-Dean of Students, Quality and Teaching of the Faculty of Arts, Deputy Director of the first Master and Doctorate School and, since 2017, Director of Research Support in the Vice-Presidency for Research in the University of the Basque Country.

His main line of research refers to the reconstruction of the life of Paleolithic hunter-gatherers in the Cantabrian region (Spain). He has published 8 books, 32 book chapters, and more than 100 research articles in indexed journals on these topics. Since 2007, he is the editor-in-chief of the journal Munibe Antropologia-Arkeologia, of the S.C. Aranzadi, which has reached the SCOPUS index during the period. Since 1985, he has directed or co-directed nearly 100 excavation seasons in Gipuzkoa, Bizkaia, Araba and Asturias.

He has carried out research stays at the Universities of Bordeaux, Cambridge and Cologne, and the Max Planck Institute in Leipzig. To date, he has directed thirteen doctoral theses, eleven of them with international mention. He has participated in 32 research projects, in more than half of which he has been principal investigator. He has contributed to almost 100 papers and communications in congresses.

A TENTATIVE SUMMARY OF VARIATION IN TERMINOLOGY, INTERPRETATION, PROBLEMS AND PERSPECTIVES OF SMALL TOOL TECHNOLOGY BETWEEN NEANDERTHALS AND EARLY SAPIENS

Francesca Romagnoli[1], Miriam Mellado[2]
Magda Cieśla[3], Paraskevi Elefanti[4]
Dušan Mihailović[5], Telmo Pereira[6]
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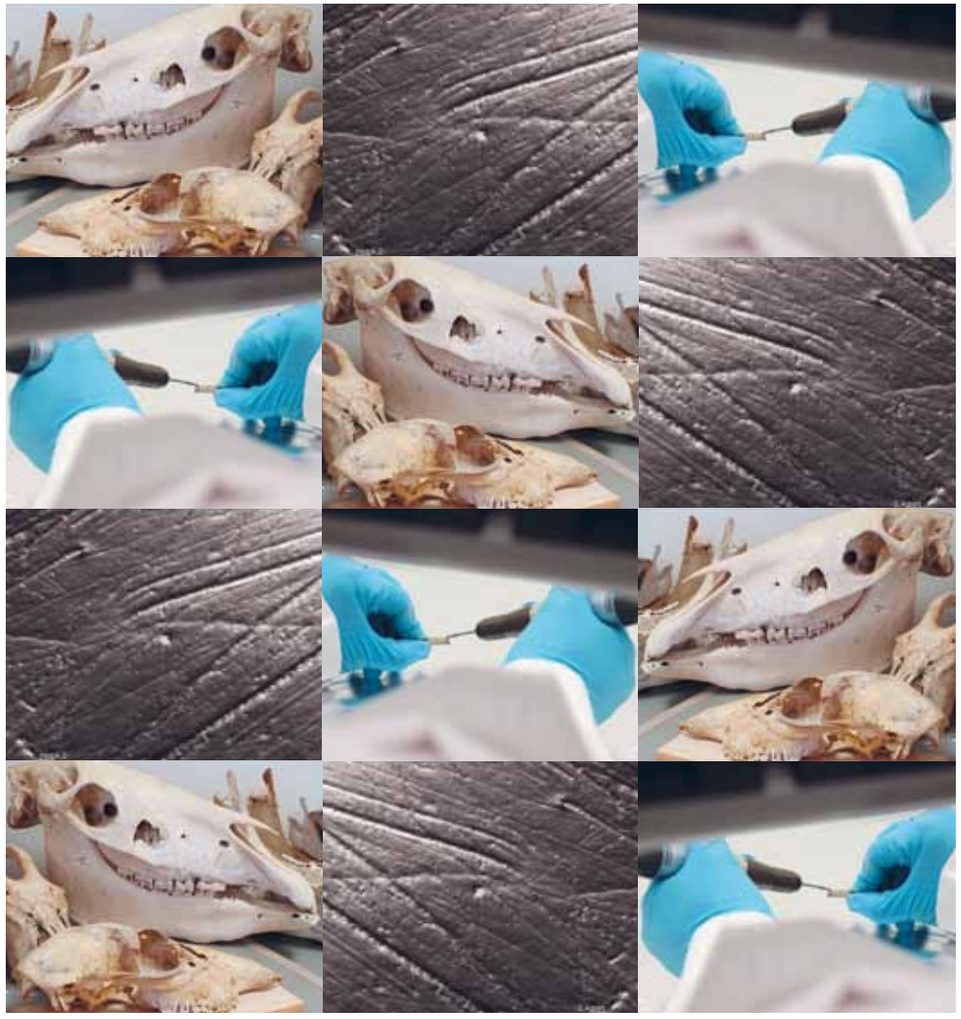
The microlithic component was traditionally considered a trait of modern human behaviour from Homo sapiens, attesting the more advance of our species. Recently, the production of small tools has been highlighting the relevance of this technological behaviour by Neanderthals [1–8]. Within the Middle Palaeolithic, the small-sized tool production has been progressively incorporated different phenomena, including core-on-flake, single core reduction progressively using different knapping systems (Levallois, discoid, blade etc.), configuration of retouched tools, bipolar knapping and the search for unmodified cutting edges. In addition to the variability of production processes and stylistic patterns, recent studies also highlight a variety of economic strategies (expediency, planning, recycling, and integration), and its relations with raw material constraints and mobility patterns. Furthermore, some methodological problems in the identification and terminology of the microlithic stone tool component (e.g., the notion of size, the distinction between knapping waste and searched tools, and the use-wear data) are contributing to enlarge de discrepancies in the knowledge of small-sized tools in time and space.

This work is an attempt to present a systematic overview of this variability and to propose a collective discussion of problems and perspective in this topic through some archaeological examples. This work is expected to be a first step to identify geographical and substantive shortcomings, improve future systematic studies of small tools, and facilitate comparisons between sites.

keywords
Neanderthals, Homo sapiens, Lithic technology, Microliths, Palaeolithic archaeology, Human evolution



NEW ADVANCES IN ZOOARCHEOLOGICAL METHODS UNVEIL NEANDERTHAL BEHAVIOUR

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In the last two decades, the advances in Archaeological Science have widened and diversified the information we can obtain today from material artefacts and ecofacts. The study of the subsistence strategies carried out by Neanderthals during Pleistocene has revealed exciting and, sometimes, surprising results when material remains are approached from a multidisciplinary point of view. In addition, the reconstruction of the past environments and climatic conditions is revealing new local and regional data that allows understanding the adaptation and resilience skills of this human species to changing scenarios. Today, in combination with vertebrate archaeozoology studies, the application of stable isotopes, dental macro and microwear, dental calculus, ancient DNA and proteomic analyses, such as ZooMS, on animal remains found in archaeological contexts and directly related with Neanderthal societies, is providing exhaustive information. All these proxies provide high-resolution data at the scale of human behaviour. It is possible to reconstruct Neanderthals' diet, the mobility of animal populations, the surrounding vegetation and climate data when both animals and humans lived, the interaction and relationships between past and present populations or the origin of the species. In this presentation, we will present these current advances within iNEAL, a COST European funded project dealing with Neanderthal heritage.

KEYWORDS

Neanderthals, Zooarchaeology, Subsistence, Palaeoenvironment, Multidisciplinarity

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Ana B. Marín-Arroyo is an Associate Professor at the University of Cantabria (Spain), where she leads the EvoAdapta Research Group. She is an archeozoologist specialized in studying the Paleolithic, focusing on the human-environment relationship and how humans adapted their strategies of subsistence to those changes with cutting-edge interdisciplinary methods. Currently, she is the PI of the ERC SUBSILIENCE project.

Florent Rivals

Florent Rivals is ICREA research Professor at the Institut Català de Paleoecologia Humana i Evolució Social (IPHES) in Tarragona (Spain). He has a primary research interest in dietary reconstructions analyzed through tooth microwear and mesowear to reconstruct ancient environments, to track shifts related to climatic changes, and to understand Neanderthal behavioral strategies in different ecological settings.

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Adrian Dobos is an archaeologist specialized in the research of Lower and Middle Paleolithic. Among his main research interests are lithic industries, hominin-environment interaction, and site formation processes.

THE MIDDLE PALEOLITHIC RESEARCH IN ROMANIA: DRAWBACKS AND ACHIEVEMENTS

Romania holds a key geographical position in understanding the population dynamic throughout Pleistocene Europe. My presentation discusses several older and recent problematic aspects related to the current state of the art of the Middle Paleolithic (MP) in Romania. These aspects tend to be obscured by the recent important (re)discoveries of the Anatomically Modern Human fossils that took place in Romania. The current MP evidence comes from a bit over 20 sites of various sizes excavated during the 20th century. There are different problems regarding the traditional MP research in Romania: field research methods were non-standardized and in many cases inaccurate; interpretations on lithic assemblages were centered on typological descriptions; the oldest MP occupations were considered to be dating only from early Würmian stages.

Recent re-assessment of the age of some sites in Romania has revealed that the timescale for the MP evolution spans to late Middle Pleistocene, being much older than previously assumed. New research on loess sequences and cave sediment dynamics has led to a better understanding of climatological aspects and intensity of taphonomic processes.

Similarly, fresh perspectives on lithic assemblages have gone beyond cultural-historical interpretations and provided a broader picture on the dynamics of the MP groups. Despite these recent advancements, issues in the research of the Middle Paleolithic persist: incomplete lithic and faunal assemblages, uncertainties regarding the tridimensional provenience of the pieces, the impossibility to resume excavations in some sites (destroyed by industry or fully excavated).

However, in spite of these old and new problems, MP still presents significant research interest, since the number of potential sites in Romania is much larger than the excavated sites, as is indicated by the over 150 findspots with surface lithics which can belong to the MP, and also by the great number of fossil caves which have not been tested.

Keywords

Middle Paleolithic, Romania, Geochronology, Lithic industries

ON THE EDGE OF THE ICE SHEET, POLISH CONTRIBUTION TO THE RESEARCH ON THE NEANDERTAL MAN

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Finds from the region of Poland designate the outline of the northern periphery of the Neanderthal ecumene. The discussed area was under a strong influence of middle and upper Pleistocene climate changes. The repeated episodes of cold climatic conditions affected the dynamics of the Middle Paleolithic settlement. We can surmise that periodic transgressions of the northern ice sheet changed the readability of the cultural record in the northernmost areas of the ecumene. A significant part of the archaeological sites from the times of Neanderthals is situated in southern Poland. These are loess open-air sites as well as and cave sites. A significant part of them were investigated in methodical excavations, during which the stratigraphy and the chronology of the finds were determined. It can be assumed, that the area of northern Poland – possibly also accessible for Neanderthals in the warm climatic phases – was wiped out by an ice sheet, mainly during the ice transgression in LGM. This article aims to present the characteristics of the Polish MP archaeological sources which consist almost entirely of remnants of the material culture, although the biological remains of Neanderthals have recently been reported. We would like to brief you with key points of the regional Middle Paleolithic discussion and to present selected finds that could be incorporated into the global reflection of the discussed issue.

KEYWORDS
Middle Palaeolithic, Neandertal, Poland

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NEANDERTAL MIGRATIONS THROUGH EUROPE AND THEIR LEGACY IN NORTHERN AND EASTERN FRANCE (MIS5-3)

Agnes Lamotte
Thomas Gil Desmadryl
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Dr Agnes Lamotte is Head of the Programme "Palaeolithic of Hungary" (Minister of Europe and Foreing affairs) 2019-2022, and Head ot the programme "Palaeolithic of Northern Franche-Comté" (eastern France) since 2015.

Thomas Gil Desmadryl

At the end of the Middle Palaeolithic, Northern and Eastern France had many archaeological sites whose typo-technological content (especially leaf-shaped tools) indicate origins from outside this region. During OIS 8 to 5e, the differences between the lithic series relate to the knapping and shaping function and also to the presence or absence of bifaces. During that time, in Europe, there is no clear evidence of real ruptures in typo-technology except in the shapes of the bifaces and the presence of specific knapping methods (Quina, laminar, Levallois, Discoïd). However, during OIS 5d and especially the OIS 3, changes are noticeable and similarities between France and Central and Eastern Europe become more common. They are the signature of the migratory movements of Neanderthals modelled on that of the fauna. Evidence for this in the North-Eastern region of France and beyond this region is provided by typological and technological aspects like Kostienki thinning, plano-convex biface, flat retouching, bipointed tools, handle to tools, clearly evoke affinities with Poland (Prondniks), Germany (blattspitzen), leafpoints (Central Europe), scrapers and bifacial tools from Crimea. Undoubtedly, these are the best neanderthal craftmanship demonstrations that allow us to propose much more precise migration routes like Danubian way or the plains of northern Europe and when they were used during the late middle Palaeolithic.

KEYWORDS

Neanderthals, Migration routes, Typo-technology Signature, Leafpoints

NEANDERTHAL OCCUPATION IN WESTERN IBERIA DURING THE MIS 6: THE MONTE DA REVELADA OPEN-AIR SITE

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Monte da Revelada, at 112 m a.s.l, is an open-air and multi-component site located in western Iberia (Vila Velha de Rodão, central Portugal). The site was excavated due to the construction of a factory. The archaeological sequence revealed Modern, Neolithic, Epipaleolithic and Mousterian occupations. Over 40,000 artefacts were found, some associated with hearths and post-holes.

The site Quaternary sedimentary sequence overlays, by disconformity, a Paleogene sedimentary unit. The Mousterian industry is associated with the lower bed of the sequence and can be correlated with the topmost deposits of the T4 terrace (~45 m above the riverbed). Up to the present, the age of this bed was not yet obtained by a numerical method.

The lithic analysis of the lower bed of Monte da Revelada shows a typical Mousterian industry with Levallois and Discoidal debitage made on different types of local quartzite and milky quartz, although rare small flint nodules exist in the gravels. In Ródão area, Mousterian industries were found associated to the topmost deposits of the T4 terrace (probable age of ~200-170 to 155 ka), to the T5 terrace (~140 to 70 ka) and to the lower division (gravels) of the T6 terrace (~62 to 4 ka) (Cunha et al., 2019).

The Vila Velha de Ródão region, located at the beginning of the Lower Tejo River, in the NE edge of the Lower Tejo Cenozoic basin, is an exceptional study case for the ecodynamics during the presence and demise of the Neanderthal populations, as it has corresponded to the ecotone between the coastal (Atlantic) and the inland environmental and climatic conditions.

KEYWORDS
Mousterian, Neanderthals, Western Iberia, Ecotones, Lithic technology

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Bärbel Auffermann is the director of Neanderthal Museum in Germany. She is prehistoric archaeologist and worked as exhibition manager at Neanderthal Museum since the opening in 1996. She played a decisive role in the conception and realization of visitor-oriented permanent and temporary exhibitions.

Beate Schneider has been developing educational and event concepts at the Neanderthal Museum in Germany since 2006, with which she inspires a broad social group of people for human evolution and the life of the Neanderthals. She studied ethnology, psychology and sociology at the University of Cologne and is also a trained occupational therapist and diversity trainer.

HOLDING ON. COMMUNICATION OF CONTENT DURING THE PANDEMIC. THE EXAMPLE OF THE NEANDERTHAL MUSEUM

Bärbel Auffermann, Beate Schneider
Neanderthal Museum, Germany

The Neanderthal Museum has a unique selling point in the mediation of human evolution. Every year, more than 600 groups book our offers on this topic in preparation for biology exams.

In order to be able to provide a professional offer despite the lockdown, we created eight short videos on selected topics of human evolution in spring 2020. The links to the videos were distributed via social media, but also directly through the teachers and we received positive feedback.

This experience subsequently led to the need to monetize the digital offerings. The Neanderthal Museum is largely self-sustaining and revenue including from bookings of educational programs is one of the pillars of funding. Thus, the idea of paid online tours came up.

For the preparation of graduation exams, it is now possible to book an exclusive online live guided tour on the evolution of humankind, which is conducted in dialogue with an educator of the museum. During and after the tour, there is time and opportunity to ask questions. In the online live workshop, fossil skulls from 6 million years of human history are presented live and examined together using various scientific methods. Participation in the guided tour or seminar works via Zoom. This offer is very well received and expands the catchment area of the museum, as schools from other federal states also book. Together with European partners, we are thinking the offer further and are also planning guided tours in Spanish and Italian, for example. We are planning an evaluation of the 2019-2020-2021 ranges in comparison.

With our presentation we would like to share our experiences with other institutions and stimulate an exchange.

KEYWORDS
Neanderthal, Human Evolution, Science Communication, Science Education

NEANDERTHAL RESEARCH, EARLY HUMAN HISTORY AND THE ISSUE OF MASCULINITY. THE ROLE OF GENDER IN SCHOLARLY AND POPULAR NEANDERTHAL DISCOURSE.

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Recently, Neanderthals have metamorphosed from the losers of the human family tree to people like us, full-fledged humans. However, the persistent quest for a minimal difference which separates them from us continues. Palaeoanthropology primarily studies ancestors from a distant past, but its findings also affect the identity and self-image of us, modern humans, defining what it means to be human today. This raises several questions, ranging from more general ones (e.g. How have we used Neanderthals to conceptualize ourselves as human beings?) up to more specific ones (e.g. How are gender issues constructed in narratives about Neanderthals and what does that reveal about current implicit views about gender identities?).

This is not only visible in academic discourse, but also in popularisations of research. Popularised versions of Neanderthal research function as spotlights, conveying and amplifying the stereotypes and ideologies which are also at work in scholarly discourse more explicitly. Explicit attention will be given to how males and masculinity are presented. Implicit biases underlying our ideas and ideals of human and humanness, we argue, should be acknowledged and addressed. This will allow us to become open to more inclusive visions of the past, and of what it is to be human.

KEYWORDS

Neanderthal research, Palaeoanthropology, Masculinity, Gender, Philosophical anthropology, Androcentrism

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Susan Peeters is a PhD researcher within the Erasmus School of Philosophy (Erasmus University, the Netherlands) and the Institute for Science in Society (Radboud University, the Netherlands). She holds a master's degree in Biological Psychology and in Behavioural Biology. During her studies she focussed on primate behaviour and was fascinated by the way these 'proximate others' reflect views about ourselves, resulting in a philosophical and historical study on the role of non-human primates as a model for human nature. In her PhD project she shifted her focus to palaeoanthropology, notably Neanderthal research, aspiring to illuminate implicit assumptions underlying our idea and ideal of humanness, and challenge the anthropocentric and androcentric framework.

Hub Zwart studied philosophy and psychology at Radboud University Nijmegen and defended his thesis in 1993 (cum laude). In 2000 he became full Professor of Philosophy at the Faculty of Science RU Nijmegen. In 2018, he was appointed as professor of philosophy of science and dean of Erasmus School of Philosophy in Rotterdam. His research develops a philosophical (dialectical) perspective on contemporary technoscience within the broader context of contemporary culture.

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IN THE MIND'S EYE COMMUNICATING NEANDERTAL RESEARCH THROUGH FICTION

Linda Dielemans
Independent researcher

Linda Dielemans (1981) studied Prehistory of Northwestern Europe at Leiden University. For over a decade she worked as a field archaeologist in the Netherlands, until the stories behind the features became too loud to ignore. Since 2013, she has published four children's novels as well as two works of children's non-fiction, all set in prehistory. Several of Linda's books have been awarded or nominated for Dutch literary prizes.

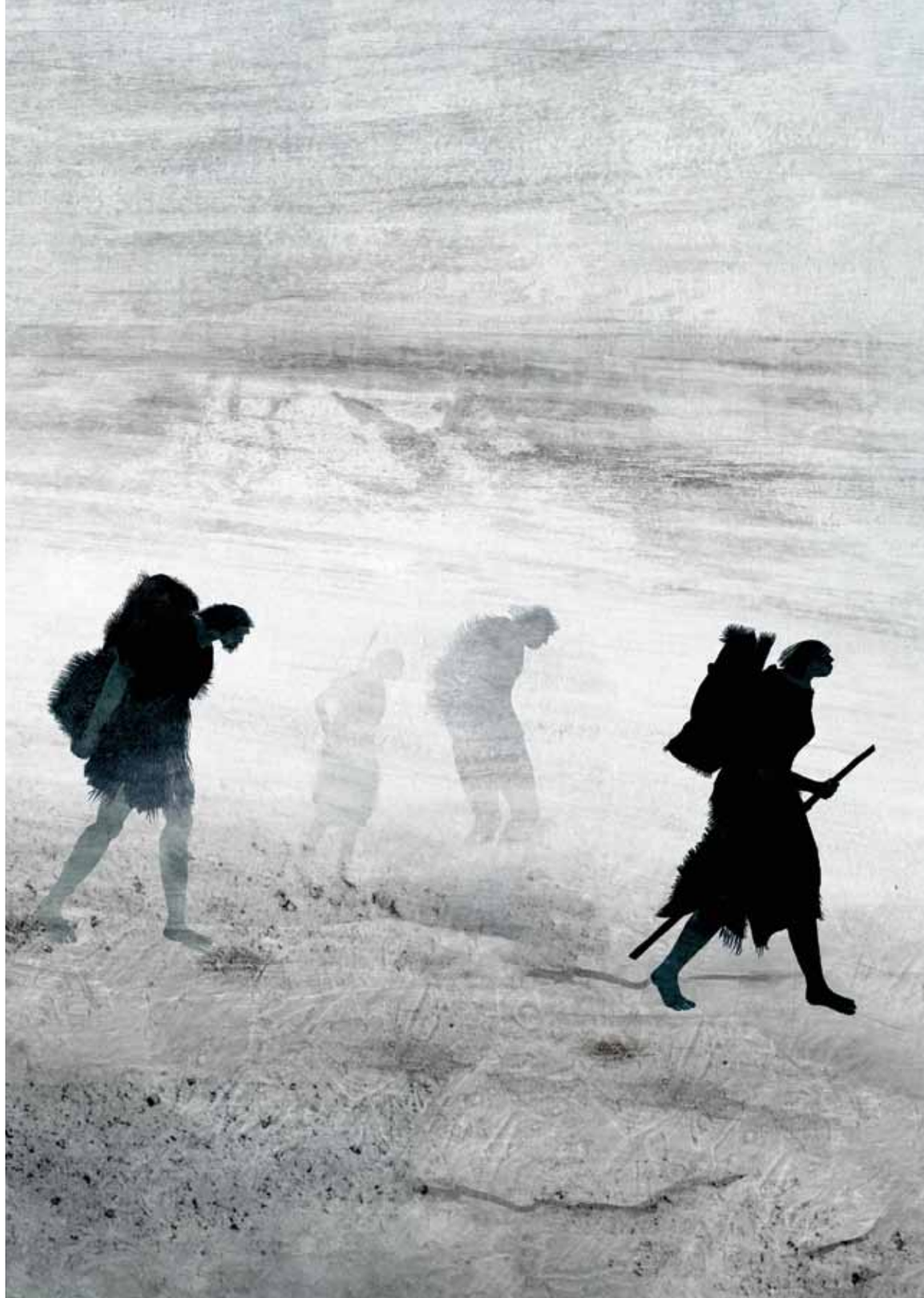
Neandertals have captured people's imagination since the discovery of the first Neandertal bone. The way we think of our long-lost cousins evolves as science advances. Or does it? The witless caveman stereotype seems to persist with the general public, despite researchers' best efforts to communicate the results of their hard work. But perhaps that is no wonder. From picture books to even the most well-intended films and novels, Neandertals are consistently portrayed as 'the Other': creatures not-quite-human, dumb or silly, limited compared to ourselves at best. No front-page headline or science book, however brilliant, seems to be able to erase the image popular culture has been feeding us since childhood. In this paper, I propose to fight fire with fire, utilising science-based fiction to tip the scale. Instead of waiting for an author or filmmaker to come and ask for advice, researchers could – or even should – make the first move by actively reaching out to and working with the creative community.

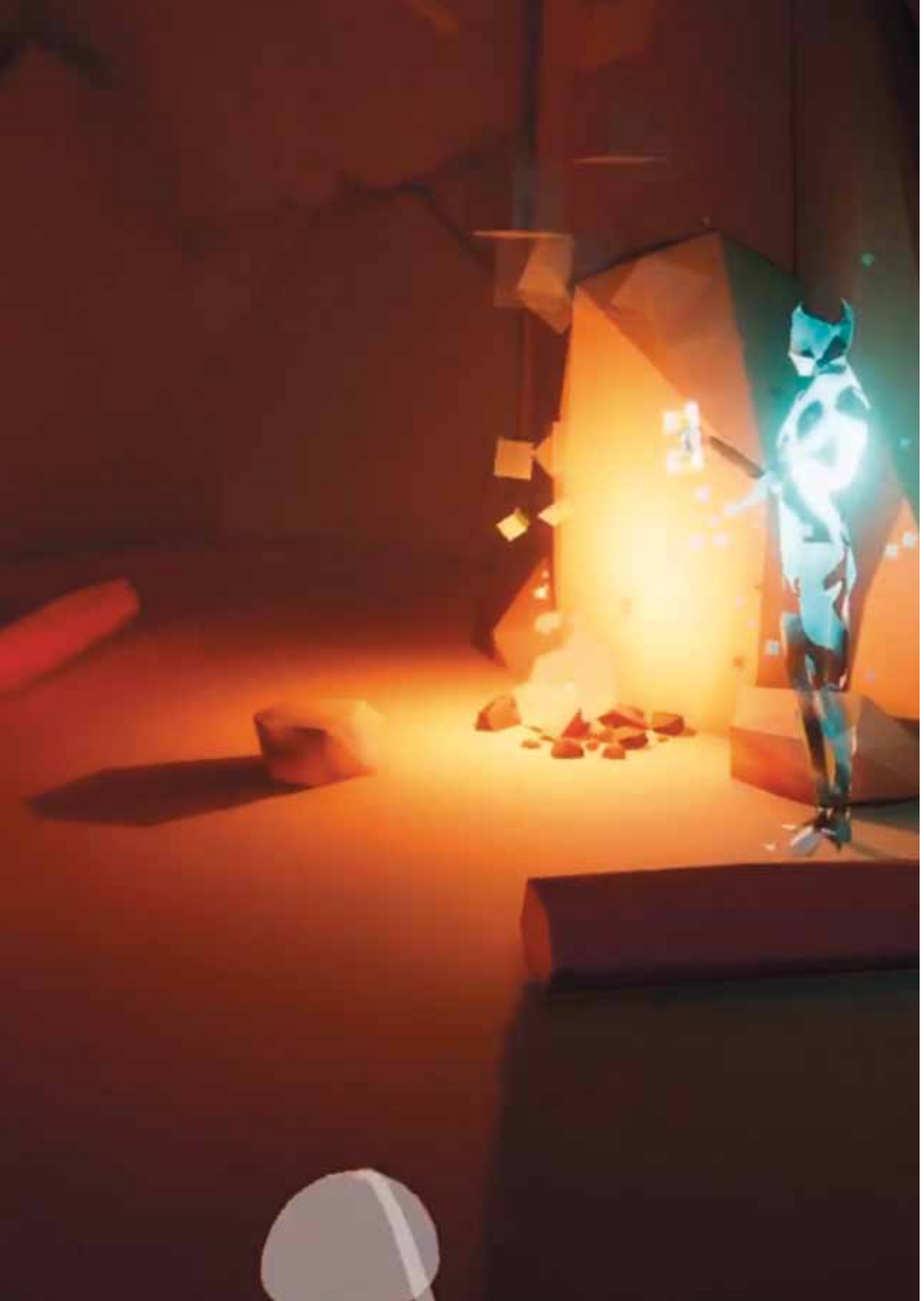
Through examples from my own experience as an archaeologist and professional novelist, I hope to make a case for the idea that fiction can be an important tool, that is not only powerful enough to finally beat Boule's Neandertal, but, if used well, also has a way of aiding and enriching original research.

KEYWORDS

storytelling, fictionalisation, science communication, public outreach, public engagement

← L. Dielmans photo by Annelien Nijland
On the move by Djenné Fila →





EXPLORING OPPORTUNITIES OF CROSS-BORDER DIGITAL HERITAGE APPLICATIONS USING EMBODIED INTERACTION IN VIRTUAL REALITY SIMULATIONS TO DISSEMINATE THE NEANDERTHAL LEGACY

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In collaboration with "COST Action Integrating Neandertal Legacy: From Past to Present," this project details how to design, validate with field experts, and demonstrate a Virtual Reality application to be experienced by the wider public, and as a space for making live the theories of Neanderthal tool crafting. This merger of Virtual Reality, gamification, and efforts for the protection and dissemination of the Intangible Cultural Heritage has, as an example, recently been explored with contemporary indigenous people. Yet, the potential impact for better understanding and disseminating the Neanderthal legacy using VR both in terms of appeal and opportunity to offer alternative learning materials is quite large.

By utilizing VR, there is a dissemination and engagement potential through embodied interaction. Embodied interaction is human-computer input responding to the body rather than relying on symbolic interfaces and has been shown to enhance learning and engagement through the feeling of grounding, immersion, and presence while accomplishing a task. Focusing on learning through embodied interaction rather than text or speech enables circumventing the need for adapting an application to the linguistic patchwork that is Europe, thereby making it as accessible as possible.

KEYWORDS

Virtual Reality, Neanderthal, embodied interaction, Cultural Heritage

Kasper Rodil, Associate Prof. at Aalborg University, Denmark. Kasper has for 10 years co-designed computing systems with indigenous people primarily in southern Africa on the protection of Intangible Cultural Heritage.

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"NEANDERTHAL: MEMORIES" WRITING AN AUDIO GAME ABOUT NEANDERTALS

Anna Riethus

Stiftung Neanderthal Museum

Anna Riethus studied Prehistoric Archaeology & Museum Studies in Vienna and Leiden, and has been supporting Neanderthal Museum (NRW, Germany) at exhibition management, research & marketing since 2016. Since 2019, Anna manages research project "NMsee" where she develops and researches on new forms of inclusive science communication, such as mobile game "Neanderthal: Memories". She is writing her PhD at Heidelberg University on the effects of inclusive offers on the museum visit of blind, visually impaired and seeing visitors."

Within research project NMsee – a cooperation between the federation of the blind and visually impaired and the Neanderthal Museum in Germany - an inclusive mobile game on Neanderthals was developed in the last 3 years. "Neanderthal: Memories" offers museum visitors a new, accessible and playful form of access to explore our past. The game copies simple screenreader gestures and audio game mechanics in order to guide visitors through Neanderthal Museum. The main character of the game, the Homo sapiens-Ice-Age huntress Nami, remembers her last journey with her adolescent son Lemminki, together with the strange encounters and difficult decisions they made along the road. As they proceed on their way to the family's new camp, both Lemminki and the player learn more about their ancestors, the mysterious "elders" (our modern-day Neanderthals) and the Ice Age way of life. Whilst game design & development was done by specialized companies, the narrative design of Neanderthal: Memories was done by project leader Riethus. This talk presents the game narrative and addresses the advantages and difficulties when writing a solely audible game story about our favourite ancestors - the Neanderthals. Furthermore, the potential of (audio) games as informational museum media is put out for discussion.

KEYWORDS

Neandertal, Game, Museum, Storytelling, Heritage Management, Inclusion

LONG DISTANCE RAW MATERIALS IN THE MIDDLE PALAEOLITHIC OF NORTHERN HUNGARY: NEANDERTHALS OR ANATOMICALLY MODERN HUMANS, WHO DID WHAT?

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Studies dealing with the procurement and circulation of raw materials during the Middle Palaeolithic tend to demonstrate that Neanderthals used raw materials from local and regional sources. In Western Europe, the distance of the sources rarely exceeded 25–30 km from their settlements. It has also been demonstrated that the use of long distance raw materials increased during the Upper Palaeolithic by Anatomically Modern Humans (AMH). In Eastern Central Europe, the distances of the sources are usually higher in both periods. The case of Northern Hungary provides an interesting situation for the study of the procurement problem. The region is rich in siliceous rocks (limnosilicites, quartzporphyry, silicified rocks) of different abilities for knapping, but good quality raw materials (radiolarite, flint) are almost lacking. Sources of these latter are located at around 200 to 400 km, mainly outside the Carpathians. However, the use of extra- Carpathians raw materials was reported in Middle Palaeolithic context. During new excavations at Sajóbábony open-air site (dir. A. Lamotte & Zs. Mester, 2019-2022) the eponymous of the Middle Palaeolithic Bábonyian industry, artefacts made of flint from Poland have been discovered in archaeological contexts. They are blades, crested-blades and ordinary flakes, scrapers and end-scrapers. As demonstrated in France in the 1990s and later in other part of Europe and Africa, these artifacts can also be produced by Neanderthals. Taking into account the archaeological context of this specific raw material, the question could be posed: Neanderthals or AMH, who did what?

KEYWORDS

Late Middle Palaeolithic, Early Upper Palaeolithic, raw material procurement, lithic technology

LONG DISTANCE RAW MATERIALS IN THE MIDDLE PALAEOLITHIC OF NORTHERN HUNGARY: NEANDERTHALS OR ANATOMICALLY MODERN HUMANS, WHO DID WHAT?

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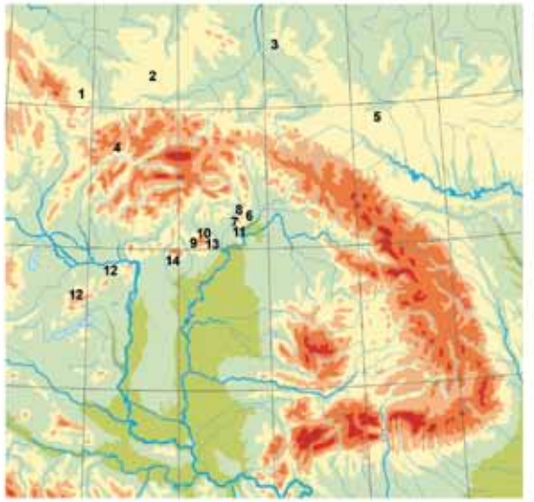
Raw materials of the Carpathian regions

Due to its complicated geological history, the Carpathian regions are rich in siliceous rocks: Jurassic radiolarites in Transdanubian Range and in Western Carpathians, Triassic quartz-porphyry (metarhyolite) in Bükk Mountains, Miocene limnosilicites in North Hungarian Range, Miocene silicified sandstone in Bükk mountains, obsidian in Tokaj-Prešov Mountains in Hungary and Eastern Slovakia. However, sources of good quality Mesozoic flint and cherts are located only only in outer Carpathian regions in Poland and Western Ukraine.

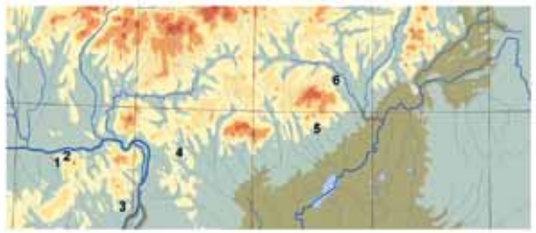


Longdistance raw materials

Local and regional raw materials

Raw material use in the Middle Palaeolithic of Hungary

Studies dealing with the procurement and circulation of raw materials during the Middle Palaeolithic tend to demonstrate that Neanderthals used raw materials from local and regional sources. In Western Europe, the distance of the sources rarely exceeded 25–30 km from the settlements. It has also been demonstrated that the use of long distance raw materials increased during the Upper Palaeolithic by Anatomically Modern Humans. In Eastern Central Europe, the distances of the sources are usually higher in both periods.



site	cultural unit	dominant raw material	farest raw material
1) Tata	Taubachian	quartzite, silex	radiolarite (60 km)
2) Jankovich Cave	Jankovichian	radiolarite	quartz-porphyry (180 km)
3) Érd	Quina Mousterian	quartzite	radiolarite (40 km)
4) Galgagyörk	Micoquian	limnosilicite	obsidian (200 km)
5) Subalyuk Cave	Typical Mousterian	local chert	obsidian (120 km)
6) Sajóbábony	Bábonyian	quartz-porphyry	Świeciechów flint (350 km)

Raw materials at Sajóbábony

raw material	pcs	%
quartz-porphyry (metarhyolite)	1188	70.55
limnosilicites	448	26.60
quatsite	24	1.43
Świeciechów flint	14	0.83
andesite	4	0.24
obsidian	3	0.18
Volynian flint	2	0.12
limestone	1	0.06
total	1684	100.00

During new excavations in 2019 at Sajóbábony the eponymous open-air site of the Bábonyian industry, artefacts made of extra-Carpathian flints have been discovered in archaeological contexts. Among them are blades, crested-blades, flakes, scrapers and end-scrapers made of Świeciechów flint. The presence of this rare raw material is already documented in the Carpathian regions in a Middle Palaeolithic industry at Nižny Hrabovec (Eastern Slovakia), as well as in an Aurignacian industry at Andomaktálya 1 (Northern Hungary). At other sites of the Bükk Mountains area sporadic pieces have been also found in mixed MP-UP assemblages (e.g. Eger-Kőporos).

Taking into account the archaeological context of this specific raw material, and the evidence that, in other part of Europe and Africa, these artifacts can also be produced by Neanderthals, the question could be posed:

Neanderthals or AMH, who did what?

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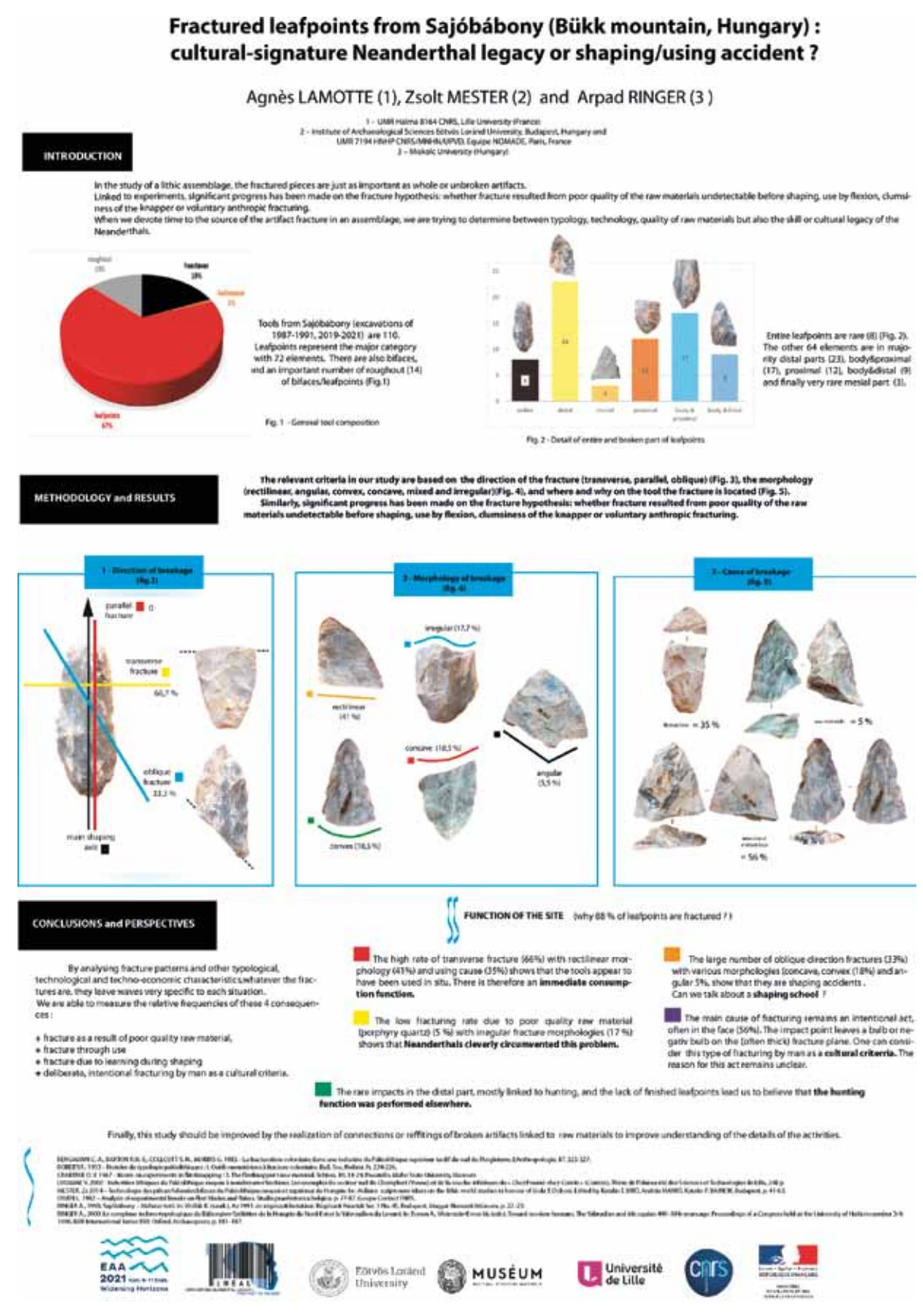

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FRACTURED LEAFPOINTS FROM SAJÓBÁBONY (BÜKK MOUNTAIN, HUNGARY) : CULTURAL-SIGNATURE NEANDERTHAL LEGACY OR SHAPING/USING ACCIDENT?

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Zsolt Mester [2]
Arpad Ringer [3]

1 University of Lille
2 university of Budapest
3 university of Miskolc

In the study of a lithic assemblage, the fractured pieces are just as important as whole or unbroken artifacts. When we devote time to the source of the artifact fracture in an assemblage, we are trying to determine between typology, technology, quality of raw materials but also the skill or cultural legacy of the Neanderthals. The relevant criteria in our study are based on the morphology of the fractures (rectilinear, angular, convex, concave, mixed and irregular), the direction of the fracture (transverse, parallel, oblique), and where on the tool the fracture is located. Similarly, significant progress has been made on the fracture hypothesis: whether fracture resulted from poor quality of the raw materials undetectable before shaping, use by flexion, clumsiness of the knapper or voluntary anthropic fracturing. Whatever the fractures are, they leave waves very specific to each situation. By analysing fracture patterns and other typological, technological and techno-economic characteristics, we are able to measure the relative frequencies of these 3 consequences: fracture as a result of poor quality raw material, fracture through use, or deliberate, intentional fracturing by man as cultural criteria. We apply this analysis/method to the site of Sajóbábony (eponymous site of the bábonien) where whole leafpoints are present as well as numerous broken leafpoints, (excavations of 1986-87-1991). About 50 pieces help us to build our demonstration of fracture pattern, with a special focus on whether intentional fracture is a legacy of Neanderthals from Central Europe.

KEYWORDS
fracturing, leafpoints, Sajóbábony, neanderthals, Hungary