LEIBNIZ-ZENTRUM
FÜR ARCHÄOLOGIE

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Press release

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EARLY FISHING TECHNOLOGIES

Oldest depictions of fishing discovered in Ice Age art: Camp site reveals 15,800-year-old engravings of fish trapping

Neuwied/Durham. The ice-age camp site of Gönnersdorf on the banks of the Rhine has revealed a groundbreaking discovery that sheds new light on early fishing practices. New imaging methods have allowed researchers to see intricate engravings of fish on ancient schist plaquettes, accompanied by grid-like patterns that are interpreted as depictions of fishing nets or traps. Led by Monrepos, a department of the Leibniz-Zentrum für Archäologie, and Durham University, this research not only deepens our understanding of Palaeolithic diets but also suggests that fishing may have held symbolic significance within the Late Upper Palaeolithic period (ca 20,000 - 14,500 years ago). These findings expand the known repertoire of Ice Age art and offer remarkable insights into the symbolic and social practices of early hunter-gatherer societies.

A joint press release from LEIZA, MONREPOS and Durham University

The ice-age camp site of Gönnersdorf on the bank of the Rhine contains some of Europe's richest ancient artistic treasures - hundrets of small, flat plaquettes of schist with engraved images of prey animals, including wild horse, woolly rhinos, reindeer and mammoth which were critical to the survival of the Late Upper Palaeolithic group of humans who occupied the camp 15,800 years ago. In addition to these highly detailed images, several hundred engravings of highly stylised human females have made the site world-famous. It has now also yielded the earliest known evidence about our ancestors' methods of fishing.

An interdisciplinary collaboration between Durham University's Departments of Archaeology and Psychology and the MONREPOS Archaeological Research Centre and Museum for Human Behavioural Evolution (a department of the Leibniz Zentrum für Archäologie (LEIZA) in Germany), have been researching the uses and

function of art on the Gönnersdorf plaquettes in the daily lives of Ice Age hunter-gatherers. Funded by the DFG-AHRC* joint research initiative, the research team combines expertise from archaeology and visual psychology, utilizing advanced imaging techniques, particularly Reflectance Transformation Imaging (RTI), to explore the often-overlooked influence of human's visual abilities in the nature and use of art in household environments of long ago.

Through studying the nature of the cut-marks forming the engravings the research is beginning to identify individual artists and their particular 'styles'. In addition, the shapes of the plaquettes and the patterns of natural ridges and cracks in their surfaces may have influenced what would be depicted and where through a process called pareidolia – where the brain interprets natural shapes such as those of the plaquettes as meaningful things, much as we often see faces in clouds.

A surprising bonus to the research was the discovery for the first time of several intricate scenes of fish covered with grid-like patterns, which are best interpreted as representations of fishing nets or traps. Although it is known that fish formed part of the diet of Palaeolithic hunter-gatherers at the time, until now, no evidence existed as to how fish were caught. The Gönnersdorf images constitute the earliest known depictions of net or trap fishing in European prehistory, and serve to remind us that technologies that only rarely survive in the archaeological record may have much older roots than commonly assumed. The engravings also reveal that fishing had been integrated into symbolic and social practices, expanding the known repertoire of depictions in Ice Age art and revealing that practises, as well as animals, were artistic themes.

* The Household art and activities, Palaeolithic style: the psychology of 16000-year-old domestic culture at Gönnersdorg (Rheinland) and Oelnitz (Thuringia), Grant GZ: GA 683/13-1 (AOBJ: 647648), was supported by Deutsche forschungsgemeinschaft (DFG) DE https://www.dfg.de/en/ and Arts and Humanities Research Council (AHRC) UK https://www.ukri.org/councils/ahrc/

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MONREPOS Archaeological Research Centre and Museum for Human Behavioural Evolution

MONREPOS is at the same time museum and research institute. It is a department of the Leibniz-Zentrum für Archäologie, based in Mainz, a Leibniz-Association research institute, located in the Monrepos stately home near Neuwied, where research has been conducted for more than 35 years. The research centre and museum is closely linked to the Pre- and Protohistoric Archaeology section at the Institute of Ancient Studies of the Johannes Gutenberg-University Mainz.

Our research focuses on the inheritance we carry within us, which is worth millions: Our human behaviour has evolved over more than 2.6 million years. This early human history spans the longest and defining period of our behavioural evolution that is central to our research at MONREPOS. Our archaeology thrives on working together, on questions, impulses, discussion. And, not least, on criticism and on tolerance. It needs people who are curious, creative and courageous – whether these are scientists, pro bono helpers, media or visitors. MONREPOS sees itself as a platform for everyone who wishes to understand how we evolved and what unites us.

Leibniz-Zentrum für Archäologie (LEIZA)

As a Leibniz Research Institute and Museum for Archaeology, LEIZA studies humans and their development based on material remains that span three million years across time and space. The fundamental insights we gain improve our understanding of human behaviour, actions and the development of societies. In this way, LEIZA enriches our knowledge of humans from an archaeological perspective and creates essential foundations for reflecting on the present and shaping the future. With archaeology, LEIZA views human beings in context and shares the knowledge gained in international dialogue. LEIZA is active worldwide and has successfully and comprehensively conducted research in various regions of Africa, Asia and Europe. The unique concentration of archaeological, scientific, restoration and information technology expertise, combined with important workshops, laboratories and archives, makes it possible to conduct object-oriented research into the archaeology of the ancient world (Asia, Africa, Europe) from the beginnings of human history to modern times. As one of eight research museums in the Leibniz Association, LEIZA combines excellent science with exhibitions and, with its educational mission, is also a place for dialogue with the public.

Until its renaming on 1 January 2023, LEIZA was known internationally as the Römisch-Germanisches Zentralmuseum (RGZM), which was founded in Mainz in 1852 by resolution of the German Historical and Antiquities Societies. Since 2024, LEIZA is represented at four locations in Germany: Mainz, Neuwied, Mayen, and Schleswig. www.leiza.de

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Archäologisches Forschungszentrum und Museum für menschliche Verhaltensevolution

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Durham University