

The 10th International Conference of the Pre-Pottery Neolithic Chipped and Ground Stone Industries of the Near East (PPN10) Advancing Current Methods in Lithic Analysis. Copenhagen University, 17th-22th, Oct. 2022

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General Information

Organised by Tobias Richter and Anne Jörgensen Lindahl, the PPN10 was held in a hybrid format within the premises of the Department of Cross-Cultural and Regional Studies, Centre for the Study of Early Agricultural Societies, Copenhagen University. The hybrid format was a novelty for the Pre-Pottery Neolithic Chipped and Ground Stone Industries Conferences, as was the internal organisation of contributions structured in three research methods-oriented workshops. Of course, both directed the different atmosphere of the gathering when, *e.g.*, compared to Tokyo or other previous meetings. Fewer colleagues (Figs. 1-2; about 25-30) were present (with about the same number of online participants), resulting in a less vivid and more limited personal/ private exchange and come-together. The PPN10 conference gave an idea about the commonly experienced consequences of using hybrid formats for our Neolithic family's future academic and social cohesion, which was not really a topic during the meeting. It was felt, however, that COVID-19 had also basically changed rules, attitudes, and atmospheres for gatherings, introducing zooming as an option that eased budget problems and promoted selective attention. Our triennial aggregations and their atmospheres will witness new conditions of exchange if future hosts choose to promote hybrid formats on account of physical presence meetings (the PPN11, our next meeting, will be held in 2025 in Lyon and Jalès, organised by Frédéric Abbès and the colleagues from Lyon, *cf.* below).

In the following, I select only some aspects of the conference for this report.

Possibly also due to a higher share of participating younger colleagues, our Copenhagen gathering activated *déjà-vus* accompanying us older from PPN1 times in Berlin in 1993. They relate to reoccurring basic discussions and demands – often described as freshly identified or “new” and “pressing” from the perspectives of new research/ topic contexts. They remind us of carried-on problems of lithic research and the struggle to find a mutually agreed language and standards. While some older colleagues arranged themselves to live with this over the decades, our academic offspring and less disillusioned colleagues engage in new proposals and activity calls. This re-addressing of old problems is a natural phenomenon and testifies to a permanently high conscience for rejuvenating research and promoting its momentum. Questions like if we still can classify a tool with an arrowhead morphology as an arrowhead when it was used as a burin after it passed a life-cycle as a cutting tool, were seen as novel. Or: the imperative demand for commonly accepted definitions and statistic conventions in addressing and analysing blanks to allow inter-site comparability in primary production was presented as if the issue had been overlooked. While such questions and demands were repeatedly posed without success during the past PPN meetings (*cf.* also below on the Final Discussion) and failed due to existing limits in data processing, PPN10 showed ways out for the first time by using artificial intelligence in analysis. Although the competent initial research question will always remain decisive, AI will likely dramatically improve our future evaluation options. Perhaps we will soon see the first lithic persons combining extended lithic expertise (that included experimental and



Fig. 1 View of the PPN10 physically attending audience. (Photo: H.G.K. Gebel)



Fig. 2 Anna Belfer-Cohen and her academic daughter Leore Grosman, concentrating. (Photo: H.G.K. Gebel)

replicative competencies) and AI lithic software engineering. The first of these made themselves heard in Copenhagen, led by Denis Štefanisko.

Workshops 1 and 2 and General Session (*cf.* the contributions listed below)

In addition to the General Session, assembling “any topic relating to the overall conference theme” presented as verbal or poster communications, two major workshops were organised. (Roundtable) Discussions followed each of the session parts.

Workshop 1 (organised by Tobias Richter and Leore Grosman) concentrated on new approaches to artefact analysis. It aimed to discuss new methods in classifying technological, typological, and functional analysis of Neolithic artefacts, with emphasis on tackling systematic large-scale classifications and related issues of classifying formal and non-formal types.

Workshop 2 (organised by Danielle Macdonald and Anne Jörgensen-Lindhäl) aimed to explore “how use-wear and residue analyses inform our understanding of Epipalaeolithic and Neolithic communities.” Themes were related to the development of new methodologies, the integration of functional and techno-typological studies, and use-wear as it relates to wider cultural or landscape-based questions. Two roundtable discussions concentrated on the *Integration of use-wear analysis with other data to understand the past* and on *Methodological challenges and future directions for use-wear analysis*. During the latter, some essential points were raised, *e.g.*, how and what has to be recorded in which detail during the experimental/ replicative work. The discussion illustrated the problems by, *e.g.*, addressing recording the number of blows executed by what materials using which energy.

Final Discussion

The main focus of the final session’s discussion concentrated on the need for standards and standardisations in PPN lithics research (T. Richter), *e.g.*, to make

results comparable through the development of shared definitions, type lists, best practices, dictionaries, *etc.* Questions about the integration of different analysis levels were also raised.

In the following discussion, it was doubted that such things are possible and applicable in a binding manner (A. Belfer-Cohen, H.G.K. Gebel and others) because standardisations of diversities have repeatedly proved to be inappropriate in objective and factual terms and practically impossible due to different traditions of analysis (schools), individual understandings and geographical and temporal diversity. A.N. Goring-Morris reminded the audience that standardisation was already not feasible with the five workshops established by the PPN1 in 1993 and that a renewed approach for a PPN lithic dictionary at PPN5 (Fréjus) also failed. Much would have been achieved if at least applied standardisations and definitions were made transparent and explicit in research contributions, which all too often does not happen. While L. Grosman suspected fewer problems for the work on standardisations because many things are self-evident (“everyone knows what a flake is, for example”), A. Gopher countered that even seemingly self-evident answers can give rise to clearly differing opinions, especially when it comes to putting them down in writing.

T. Richter noted that the use-wear and experimental working groups are currently in advanced and enthusiastic contact and are an exemplary best practice field for cooperative work on standardisations (T. Richter).

Accordingly, H.G.K. Gebel contributed that the digital tools and formats developed today – in contrast to the “imperative” concepts of 1993-2004 (Berlin, Warsaw, Niğde, Venice, Fréjus) – would certainly make it possible to create online definitional corpora/ dictionaries over the years, in which competing and constantly testable edited definitions and variants are presented. This permanent editing option would not only guarantee the necessary work progress and its verifiability, it would also mitigate the obligation to adopt generally valid definitions and allow regional adaptations, including adaptations of experimental perspectives. Whether such a corpus should be designed – also conceptually – like a Wiki-Lithics or whether it should be set up more flexibly would still have to be discussed carefully; however, intentions should go in this direction. T. Richter mentioned the DRH (Database for Religious History, <https://religiondatabase.org>) as an example of this, where entries could be identified by doi’s (digital object identifiers). S. Campbell mentioned that there are also other suitable formats than Wiki.

F. Borell pointed out the immense amount of time that would be required for permanent standardisation work, which many of us cannot afford. This was only partially agreed with, with reference to the slow and years-long dynamics with which such a corpus for PPN standardisation could be developed.

The meeting ended with the decision to accept Frederic Abbès’s invitation (presented by Fiona Pichon) to hold the PPN11 conference in 2025 with Jalès as its basis.

Hands-on and Flint Knapping Session

Other highlights of Copenhagen's PPN10 included a hands-on session with materials from Copenhagen's Centre for the Study of Early Agricultural Societies collections and a vivid closing flint knapping (Fig. 3) session on Friday.



Fig. 3 Presenters in the Flint Knapping Session. (Photo: H.G.K. Gebel)

Social Events

Social events accompanying the gathering included a reception in a small private brewery by the conference hosts on the first evening, a visit to the National Museum of Denmark on Tuesday and trips to Vedbæk and Roskilde Viking Ship Museums on Saturday.

Documentation of the Conference's Presentations

Monday, 17th, October 2022: Workshop 1

The long lives of blades: a documentation approach and its bearing on possible interpretations of flint tools made on bi-directional blades in PPNB assemblages, by Dana Ackerfeld and Avi Gopher

Neolithic axes, adzes, chisels: a 3D approach (online), by Antoine Muller, Timna Raz and Leore Grosman

A network approach to quantifying stone-tool production processes (online), by Jordan Brown and Felicia De Peña

Merging the divisive: blanks, big data and why we need overarching conventions (online), by Jonas Breuers

Aegean before the Neolithic: a review of the lithic evidence (online), by Denis Guilbeau

Bayesian modelling applied to lithic artifacts: Northern Levant occupations from Middle PPNB to Late Halaf periods, by Gironès Rofes, Pardo Gordó, Bach Gómez and Miquel Molist Montaña

Workshop 1 Discussion

Evening Keynote Lecture: *Lithic technology in Palaeolithic and Mesolithic Southern Scandinavia*, by Mikkel Sørensen (SAXO Institute, University of Copenhagen)

Tuesday, 18th, October: Workshop 2

Regional variability and functional aspects of the PPNB large points' phenomenon: insights from Yiftahel, Lower Galilee (Israel), by Alla Yaroshevich, Ianir Milevski and Hamoudi Khalaily

Beyond lithic technology: potential of use-wear analysis of chipped stone tools for understanding Ba`ja LPPNB household activities, by Denis Štefanisko

Projectiles or versatile? Revisiting the function of lunates and el-Khiam points, by Anne Jörgensen-Lindahl

Patterns of use – the function of arrowheads at the Pre-Pottery Neolithic site of Kharaysin (Jordan) (online), by Bogdana Milić, Juan José Ibáñez, Fiona Pichon, Ferran Borrell and Lionel Gourichon

An experimental ballistic study of Levantine Pre-Pottery Neolithic B period arrowheads, by Maria Piliponsky, Dani Nadel and Iris Groman-Yaroslavski

Traceological analyses of the JKSH P52 and JKSH19 site lithic assemblages from occupational layers (Jibal al-Khashabiyeh, Jordan): implications on our understanding of the desert kites users during the Late PPNB (online), by Fiona Pichon, Remi Crassard, Juan Antonio Sánchez Priego, Mohammad Tarawneh and Wael Abu-Azizeh

The "life-history" of PPNB sickle blades from Ahihud, northern Israel, by Iris Groman-Yaroslavski, Maya Shemuel, Ytzhak Paz and Jacob Vardi

Roundtable Discussion: integration of use-wear analysis with other data to understand the past

Wednesday, 19th, October 2022: Workshop 2 continued

Quantifying Aesthetics: using confocal microscopy for the analysis of Epipalaeolithic artistic objects, by Danielle Macdonald and Lisa Maher

Searching the light: characterizing Neolithic polishing techniques of the butterfly beads in Northern Mesopotamia and Anatolia, by Hala Alarashi and Sera Yelözer

The production and utilization of the plaster beads from Nahal Hemar Cave: a multi-disciplinary approach, by Yaara Shafir, Iris Groman-Yaroslavski, David Friesem and Daniella E. Bar-Yosef Mayer

Qualitative and quantitative use-wear and residue approaches on ground stone tools for understanding wild plant consumption at the onset of agriculture in the Levant, by Andrea Zupancich, Emanuela Cristiani, Juan José Ibáñez and Avi Gopher

Two hafted blades from PPNB Qumran cave 24 (Dead Sea, Israel): insights on function, adhesives and hafting (online), by A. Gopher, I. Caricola, C. Lemorini, A. Nucara, S. Nunziante Cesaro, H.C. Schechter and I. Pinkas

Setting the stage: relationship between morphology, macroscopic and microscopic wear, and a way to approach this, by Patrick Nørskov Pedersen

Exploring food and craft activities in the early Neolithic site of Bestansur (EFC): glimpses from a functional perspective of stone tools (online), by Fiona Pichon, Juan José Ibáñez, Roger Matthews, Amy Richardson

Roundtable Discussion: methodological challenges and future directions for use-wear analysis

General Session

What's in a point? Evidence for east-west interactions north of the Taurus during the 9th mill. Cal BC, by Güneş Duru, Nigel Goring-Morris, Mihriban Özbaşaran and Nurcan Kayacan

Technology and iconography of stone items in the Neolithic of the southern Levant (online), by Ianir Milevski

Thursday, 20th, October 2022: General Session (continued)

Motza Final Pre-Pottery Neolithic B toolkits, by Jacob Vardi, Hamoudi Khalaily, Avraham Levy, Dmitri Yegorov

Two Early Natufian Sites in the Lower Jordan Valley and their contexts, by Nigel A. Goring-Morris and Anna Belfer-Cohen
Recent excavations at Shubayqa 6 in northern Jordan, by Tobias Richter

The state of replication experimentation in Southwest Asian Archaeology and future directions in research, by Theresa Barket

Utilizing lithic replication in the identification of technical concepts. The structured production of blades, bladelets and blanks during the Natufian and PPNA at Shubayqa 1 and 6, by Johan Villemoes

Time, value, and meaning: insight from the replication of ground and polished flint nodules from the Neolithic site of Wadi Shu'eib, by Theresa Barket

Neolithic sickles of the South Caucasus and North Mesopotamia, by Yoshihiro Nishiaki

Another lithic tradition in the Pottery Neolithic of the Eastern Fertile Crescent? (online), by Osamu Maeda

Friday, 21st, October 2022: General Session (continued)

Elements of continuity and discontinuity from Caspian Mesolithic to Neolithic: chipped stone assemblage of Hotu Cave, Mazandaran, Iran (online), by Mozghan Jayez, Hassan Fazeli Nashli and Judith Thomalsky
Evolution of sickle manufacturing technologies and ways of use during the origins and consolidation of agricultural systems in the Euphrates Valley (8200-6500 cal. BC), by Ferran Borrell

The Hamrian Punch. Cone shell meat extraction in coastal Oman's later prehistory. A replicative system analysis, by Hans Georg K. Gebel

Seeking obsidian exploitation/ exchange networks of the Neolithic communities at Göytepe, West Azerbaijan (online), by Fumika Ikeyama, Farhad Guliev and Yoshihiro Nishiaki
60 years of obsidian sourcing: legacy data and issues of compatibility and curation, by Stuart Campbell, Osamu Maeda and Elizabeth Healey
General Session Discussion

Poster Session

Hunting practices at the Cypro-PPNA village of Ayios Tychonas-Klimonas (Cyprus), by Laurence Astruc, Bernard Gassin, Niccolò Mazzucco, François Briois, Jean-Denis Vigne

The Early PPNA lithic industry of Ahihud, Galilee, Israel, by Hannah Parow-Souchon, Yitzhak Paz, Jacob Vardi

Manchester Obsidian Laboratory, by Elizabeth Healey *et al.*

By the source: the lithics of PPNA Ain Miri in the Upper Galilee and the nearby flint quarry PQ1, by Alex Kuklin and Avi Gopher

Final Discussion

Hands-on Session of Institute Collections and
Flint Knapping Session

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