



Université Paris Nanterre, Maison Max Weber

Lundi 17 et Mardi 18 décembre 2018

Org. D. Muianga (UEM, Mozambic), G. Porraz (CNRS, UMR7041), C.Verna (CNRS, UMR7194)

Rencontres d'Air Moderne et de Préhistoire Africaine

« L'Afrique des origines » se laisse voir de bien des façons mais c'est en particulier l'Art et les Traditions de ce continent qui nous font toucher sa singularité et son universalité. Cet art et ces traditions mettent en mouvement des modes de représentation et des savoir-faire dont la modernité et l'ancienneté sont confondantes. Les *Rencontres d'Air Moderne et de Préhistoire Africaine* sont une invitation à penser les héritages culturels et biologiques des sociétés africaines depuis l'apparition des hommes et femmes *Homo sapiens* il y a environ 300,000 ans. D'un bout à l'autre de cet immense continent, ces hommes et ces femmes se sont adaptés et se sont transformés au gré d'expériences qui ont joué un rôle déterminant dans l'histoire et l'évolution de notre espèce. Des chercheurs de toutes disciplines de l'Archéologie préhistorique présentent leur actualité et composent librement sur l'air moderne des sociétés africaines du Pléistocène et de l'Holocène.

Meetings of Modern Air and African Prehistory

"African origins" can be routed in many different ways but this is more particularly the Art and the Traditions of this continent that give us access to its singularity and universality. This Art and these Traditions provide insights into past representations and knowledge that surprise by their modernity and antiquity. The meeting of *Modern Air and African Prehistory* invites participants to discuss the cultural, cognitive and biological origins of African populations since the appearance of *Homo sapiens* men and women approximately 300ky. On a continental scale, groups adapted to diverse environments and shared experiences that have been crucial to modern human evolutionary history. Researchers from all fields of Prehistoric archaeology present their research and compose on the modern air of Pleistocene and Holocene African societies.

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Map: <https://sophiapol.hypotheses.org/files/2011/04/Plan-du-campus-et-trajet-vers-le-bâtiment.pdf>

Links: <http://www.kaleidoscopio.co.mz/>

<http://www.arscan.fr/antet/>

<http://hnhp.cnrs.fr/>



PROGRAM

Monday 17th (13h30-18h30)

- 13:30 • *"Modern Air and African Prehistory in the light of Paleoanthropology. New data, views and challenges for H. sapiens origin and evolutionary history."* By Christine VERNA, Aurélien MOUNIER & Florent DÉTROIT
- 13:50 • *"Inferring the history of demographic expansions and gene flow among populations from current population genetic data in Africa"* by Frédéric AUSTERLITZ
- 14:10 • *"MSA and LSA chronology in Northwestern Africa: new data from Rabat-Temara sites"* by Eslem BEN AROUS, Christophe FALGUERES, Roland NESPOULET & Mohamed ABDELJALIL EL HAJRAOUI
- 14:30 • *"Chronology of Middle Stone Age sequences in Southern Africa: some news from the IRAMAT-CRP2A laboratory"* by Chantal TRIBOLO, Norbert MERCIER, Nadia CANTIN, Eric DOUVILLE, Asmodée GALLY, Sebastian KREUTZER, Yannick LEFRAIS, Loïc MARTIN, Christophe PECHEYRAN, Edwige PONS-BRANCHU, Hélène VALLADAS, Gregor BADER, Nicholas J. CONARD, Guillaume PORRAZ, Aurore VAL & Manuel WILL
- 14:50 • *"Sealevel fluctuations along the Moroccan Atlantic Coast during the Upper Pleistocene: implications for Human and Carnivore settlements"* by Emilie CAMPMAS & Camille DAUJEARD
- 15:10 • *"The Mountain Exile Hypothesis: how humans benefited from African high altitude ecosystems in Ethiopia"* by Ralf VOGELSANG, Götz OSSENDORF & Minassie TEKELEMARIAM

Break around 15h30

- 16:00 • *"Cultural dynamics in Eastern Africa during the late Pleistocene: a view from Goda Buticha (Ethiopia) and Enkapune Ya Muto (Kenya)"* by Alice LEPLONGEON
- 16:20 • *"Contextualizing technological variability at Pangaya Saidi in MIS 4"* by Will ARCHER, Ceri SHIPTON, Nicole BOIVIN & Michael PETRAGLIA
- 16:40 • *"How to handle hafting? Some reflections based on black spots and other possible evidence of hafting in Africa"* by Veerle ROTS
- 17:00 • *"A remarkably continuous tradition over the past 120ka in South Africa, or heat treatment is just everywhere"* by Patrick SCHMIDT
- 17:20 • *"Ochre use in the Middle Stone Age of South Africa: looking for the function of iron oxide bearing materials"* by Laure DAYET
- 17:40 • *"Résultats des prospections archéologiques dans la région de Kasserine, Tunisie du centre ouest"* by Mondher M'HAMDI & Zaineb ELAMRI

Aperitif at the Maison Max Weber from 18h00/18h30

Tuesday 18th (08h30-13h00)

- 09:00 • *“An introduction to the archaeo-sequences of Bushman Rock Shelter and Heuningneskrans, Limpopo, South Africa”* by Guillaume PORRAZ & Aurore VAL
- 09:20 • *“The place beyond the trees: new excavations at the Middle Stone Age deposits at Olieboomspoor, South Africa”* Aurore VAL, Paloma DE LA PEÑA & Dominic STRATFORD
- 09:40 • *“The Middle Stone Age in Central Africa: using old collections to rethink the Lupemban's definition”* by Isis MESFIN, Alice LEPLONGEON & David PLEURDEAU
- 10:00 • *“Characterising the C-A layers of Sibudu, South Africa, and implications for the MSA cultural sequence in MIS 5”* by Viola C. SCHMID, Guillaume PORRAZ, Mohsen ZEIDI & Nicholas J. CONARD
- 10:20 • *“No one's home? New evidence for mid to late MIS 3 occupations in the Western Cape (South Africa) from Mertenhof Rockshelter”* by Manuel WILL, Matthew WILLIAMS, Zenobia JACOBS & Alex MACKAY
- 10:40 • *“Preliminary results on the late Pleistocene occupation of Iron Pig Rock Shelter in Mpumalanga, South Africa”* by Gregor D. BADER, Jörg LINSTÄDTER & Alex SCHOEMAN

Break around 11h00

- 11:20 • *“Typo-technological analysis of the Later Stone Age bone tool assemblage from Bushman Rock Shelter, South Africa”* by Sacha BONZOM-CHAPELLE, Léa FEYFANT, Guillaume PORRAZ & Aurore VAL
- 11:40 • *“Morpho-functional variability of the late Holocene microlithic backed tools from Pomongwe Cave Matobo, Western Zimbabwe”* by Precious CHIWARA, Lorène CHESNAUX & Guillaume PORRAZ
- 12:00 • *“The emergence of herding populations in southern Africa and in the Shashe Limpopo Confluence area (South Africa)”* by Iris GUILLEMARD
- 12:20 • *“Characterisation of colouring materials and rock art pigments in the Erongo Mountains (Namibia)”* by Guilhem MAURAN, Mathieu LEBON, Alma NANKELA, David PLEURDEAU & Jean-Jacques BAHAIN
- 12:40 • *“Humans, not frogs: Dorothea Bleek and her suggested illustrations of myth in South African rock art”* by David WITELSON
- 13:00 • *“Hunter-gatherer lithic production and rock paintings in Changalane Administrative Post: Maputo Province, southern Mozambique”* by Decio MUIANGA

Lunch at the Maison Max Weber around 13h30

ABSTRACTS & CONTACTS

Monday 17th /13h30-18h30

13:30. Modern Air and African Prehistory in the light of Paleoanthropology. *New data, views and challenges for H. sapiens origin and evolutionary history.*

Christine VERNA^{1,2}, Aurélien MOUNIER¹ & Florent DETROIT¹

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The timing and pattern of key events in the origin and spread of *Homo sapiens* continue to fuel many debates among Archaeologists and Paleoanthropologists alike. As such, the challenge is not only to identify the time and place of origin of our species, but also to decipher the complex peopling history of the planet as well as the processes of the evolution of human diversity. New discoveries and studies have recently revealed the co-existence of several hominin species during the Pleistocene in Africa but also challenged the time and place of origin of *H. sapiens* as well as the use of terms such as "anatomically modern humans". The existence of a considerable morphological diversity within the African later Middle and Upper Pleistocene hominin fossil record also challenges the patterns underlying the origin and evolution of *H. sapiens* and in particular the monocentric model. Our view of the evolutionary history of *H. sapiens* has thus drastically changed over the last few years and the emerging picture is the one of structured *H. sapiens* populations in Pleistocene Africa, which likely reflects a complex scenario of population dynamics and movements. Here, we propose a review of the current fossil evidence, and its implication for our understanding of *H. sapiens* evolutionary history. We present and discuss the possible models and processes put forward to explain the observed fossil record and the challenges that our field of research will have to face in the coming years.

13:50. Inferring the history of demographic expansions and gene flow among populations from current population genetic data in Africa

Frédéric AUSTERLITZ¹

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New computer-intensive estimation techniques such as Approximate Bayesian Computation (ABC) allows inferring unknown parts of the history of species from contemporary population genetics and genomics data. In this context, we performed a study on African populations, in which by applying MCMC methods on a large set of populations with different lifestyles (farmers and hunter-gatherers), we were able to show that these lifestyles strongly affected the expansion patterns of these populations: farmers show strong expansion signals, while hunter-gatherers showed no expansion at all. Moreover, we inferred that these expansions started before the Neolithic transition. We also inferred that hunter-gatherer populations were submitted to an admixture process from neighboring farmer populations.

14:10. MSA and LSA chronology in Northwestern Africa: new data from Rabat-Temara sites

Eslem BEN AROUS¹, Christophe FALGUÈRES¹, Roland NESPOULET¹ & Mohamed Abdeljalil EL HAJRAOUI²

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The cultural turnover occurred in the Late Pleistocene matches with the Middle Stone Age/Later Stone Age transition in Northwestern Africa. The question of this chronology is investigated here through multi-chronological approach applied in two coastal sites of Temera: El Harhoura 2 and El Mnasra caves.

14:30. Chronology of Middle Stone Age sequences in Southern Africa: some news from the IRAMAT-CRP2A laboratory

Chantal TRIBOLO¹, Norbert MERCIER¹, Nadia CANTIN¹, Eric DOUVILLE², Asmodée GALLY^{1,3}, Sebastian KREUTZER¹, Yannick LEFRAIS¹, Loïc MARTIN^{1,3}, Christophe PÉCHEYRAN³, Edwige PONS-BRANCHU², Hélène VALLADAS², Gregor BADER⁴, Nicholas J. CONARD⁵, Guillaume PORRAZ^{6,7}, Aurore VAL^{5,7} & Manuel WILL⁸

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The IRAMAT-CRP2A laboratory has been involved in establishing chronological frameworks of several Middle Stone Age sites for the last ten years, including Diepkloof Rock Shelter, Bushman Rock Shelter, Hoedjiespunt, Sibudu and Umbeli Belli. A constant effort has been made for controlling the accuracy of the ages, either by multiplying the protocols and minerals on which the luminescence dating methods are applied, or by developing a new U-series dating methodology for carbonated materials. Highlights of these methodological issues will be presented together with some of the latest results.

14:50. Sea level fluctuations along the Moroccan Atlantic Coast during the Upper Pleistocene: implications for Human and Carnivore settlements

Emilie CAMPMAS¹ & Camille DAUJEARD²

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In North Africa, the Middle Stone Age originates about 310 ka ago at Jebel Irhoud, but will develop more broadly from the beginning of the Upper Pleistocene with Aterian industries (~130 to 40-30 ka). Those latter have been found associated with ancient *Homo sapiens*. At the Late Upper Pleistocene the Iberomaurusian culture appears, associated with *Homo sapiens sapiens* and Later Stone Age industries (~20 to 12 ka). The Upper Pleistocene is submitted to important climate change with, in Africa, the alternation of humid and arid periods, linked to glacial and interglacial phases in Europe. Coastal areas are especially sensitive to these fluctuations, with oceanic transgression and regression. Thus, depending of these sea-level shifts in the past, the current Upper Pleistocene sites on the Moroccan Atlantic coast have been located along the shore or more inland. These changes seem to have deeply influenced human and carnivore occupations. In this presentation, we would like to assess the implications of this alternation on human and carnivore settlements thanks to Moroccan Atlantic coastal sites.

15:10. The Mountain Exile Hypothesis: how humans benefited from African high altitude ecosystems in Ethiopia

Ralf VOGELANG¹, Götz OSSENDORF¹ & Minassie TEKELEMARIAM¹

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Although high-altitude mountain habitats are often regarded as unfavourable for human occupation; on the other hand tropical highlands in Africa are suggested as potential refugia during times of environmental stress. The presentation gives a review of new evidence of human occupation in the tropical highlands of Ethiopia from the Late Pleistocene to the Holocene period. A first correlation of the archaeological data with the climate record suggests a complex interplay between humans and their environment during the last 20 ka. Finally, we speculate about potential land-use patterns on Mount Damota in the south-western highlands of Ethiopia.

16:00. Cultural dynamics in Eastern Africa during the late Pleistocene: a view from GodaButicha (Ethiopia) and Enkapune Ya Muto (Kenya)

Alice LEPLONGEON^{1,2}

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Recent research has highlighted the variability of the modalities and timing of transitions from the Middle Stone Age (MSA) to the Late Stone Age (LSA) in eastern Africa. Early (>50ka) transitions to LSA technologies are documented at some sites, while others show instead evidence for the persistence of Middle Stone Age technologies (<50ka). Here, we address this issue by first reviewing current evidence for lithic variability in eastern Africa during the Late Pleistocene, before focusing on the data from two major sites with long stratigraphic sequences: GodaButicha (Ethiopia) and Enkapune Ya Muto (Kenya), placing them in their palaeoenvironmental context. Results from the analysis of the lithic assemblages of both sites are then used to discuss the growing evidence for many regionally-different shifts from the MSA to the LSA across Africa.

16:20. Contextualizing technological variability at Pangaya Saidi in MIS 4

Will ARCHER¹, Ceri SHIPTON², Nicole BOIVIN³ & Michael PETRAGLIA³

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The well-documented southern African archaeological record dominates current understanding of the emergence and spread of cultural complexity in Africa. While important Late Pleistocene sites occur in other regions, very few have continuous chronologies through MIS5 and 4, wherein abrupt shifts in the complexity of stone artefact manufacture are evident in sites across southern Africa. The rock-shelter of Pangaya Saidi ('PYS') in south-eastern Kenya documents a relatively continuous sequence of detailed cultural change from the base of the current excavations, ~80ka, into the late Holocene (Shipton, Roberts et al. 2018). The present study describes key patterns within the late MIS 5 and early MIS 4 layers at PYS in terms of characteristic changes in core reduction, in raw-material selection and provisioning and in the elaboration and standardization of stone tool production. These characteristic patterns at PYS are contextualized against regional patterning in the southern African record from ~80-57ka. Trans-regional similarities and differences are then discussed in terms of the potential mechanisms underpinning cultural change at broader geographic scales in sub-Saharan Africa.

References

Shipton, C., P. Roberts, W. Archer, S. J. Armitage, C. Bitu, J. Blinkhorn, C. Courtney-Mustaphi, A. Crowther, R. Curtis and F. d'Errico (2018). "78,000-year-old record of Middle and Later stone age innovation in an East African tropical forest." Nature communications9(1): 1832.

16:40. How to handle hafting? Some reflections based on black spots and other possible evidence of hafting in Africa

Veerle ROTS^{1,2}

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Over the last few decades, stone tool hafting has played an important role in debates on technological complexity and human behavior. Both the identification of hafting and reflections on the precursors leading up to the invention have formed important elements in the debate, while also the potential link of hafting with complex cognition has been examined. The identification of hafted stone tools has been based on direct evidence such as adhesive remains and/or microscopic hafting wear traces, or on possible suggestive features, such as morphological adaptations. We present some reflections based on current evidence of hafting in Africa and we propose some avenues for future research.

17:00. A remarkably continuous tradition over the past 120ka in South Africa, or heat treatment is just everywhere

Patrick SCHMIDT¹

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Heat treatment of silcrete has been regarded as one of the major innovations of the southern African Middle Stone Age (MSA). It has been interpreted to indicate modern behaviours, complex cognition or social learning. Other authors argued for a high investment procedure that required considerable costs in terms of time and resources. The apparent importance of heat treatment for understanding the processes taking place in the MSA opened up several questions about the prevalence of the phenomenon, its spatial and temporal extent and the reasons people might have had to heat-treat silcrete. Many researchers have undertaken to answer these questions from very different points of view. In this talk, I will give an overview over the current heat treatment research in South Africa, putting forward the most recent findings from the zone where silcrete heat treatment was practised. These data highlight an unexpected temporal trend: continuity. Silcrete was heat-treated from the moment it first appeared at most sites and it was practised without interruption until sub-recent times. Also, the relative prevalence of heated silcrete artefacts in assemblages from almost the entire period did not change notably. These findings may indicate a long-lasting tradition, continuously existing over 120ka, or they might indicate the lack of understanding of the mechanisms that drive heat treatment.

17h20. Ochre use in the Middle Stone Age of South Africa: looking for the function of iron oxide bearing materials

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Red colouring materials, also called ochre, are widely exploited by MSA populations in southern Africa. Several hypothesis of use have been proposed: a use as pigment, as loading agent in adhesives, as abrasive powder, as a tanning agent, for sun protection, for protection against mosquitoes, and for medicinal purposes. At a higher level, their use may have been embedded with a symbolic meaning and they may have played a role in the codification of social interactions. Here we will examine what are the properties of the raw materials collected at different MSA sites and we will discuss the probability of each hypothesis of use. We will also present recent data published on a geometric drawing that, for the first time, allow to demonstrate the use of ochre as pigment.

17:40. Résultats des prospections archéologiques dans la région de Kasserine, Tunisie du centre ouest

Mondher M'HAMDI¹ & Zaineb ELAMRI¹

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Les travaux d'investigations archéologiques menés dans les deux bassins Kasserine et Foussana et essentiellement sur les deux rives d'oued Htab (Kasserine) ont révélé la présence de plusieurs témoignages d'occupations préhistoriques et protohistoriques. Ces témoignages se manifestent par la présence en surface et dans les sédiments d'un outillage lithique en calcaires, quartzites et silex représentant trois cultures : acheuléenne, moustérienne et capsienne. Les traces archéologiques se manifestent également par la présence de plusieurs nécropoles mégalithiques occupant les sommets des djebels et les collines de KhanguetEsslougui, dont la série géologique est d'âge Cénomanien supérieur, situé en amont d'oued Htab.

Notre travail a pour objectif l'identification et la description des sites archéologiques inédits dans cette région. Ensuite, la caractérisation de ces cultures préhistoriques et protohistoriques à travers les travaux de terrain et les recherches scientifiques des chercheurs-universitaires et archéologues de l'institut national du patrimoine (INP).

09:00. An introduction to the archaeo-sequences of Bushman Rock Shelter and Heuningneskrans, Limpopo, South Africa

Guillaume PORRAZ^{1,2} & Aurore VAL^{2,3}

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Bushman Rock Shelter and Heuningneskrans are two sites located on the border of the Highveld, north-east of South Africa (Limpopo Province). Previous excavations conducted at both sites have revealed >6m deposits with archaeological occupations spanning from the Middle Stone Age to the Later Stone Age. In the present communication, we aim at (1) introducing general observations from our renewed excavations, (2) discussing how the two sites complement each other and differ from one another and (3) positioning the two sequences in the current late Pleistocene/early Holocene chrono-cultural framework.

09:20. The place beyond the trees: new excavations at the Middle Stone Age deposits at Olieboomspoor, South Africa

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The site of Olieboomspoor, in the Waterberg area of Limpopo Province, is one of the few rock shelters in South Africa documenting phases of occupation going back to the Acheulean and up until the very end of the Later Stone Age (ca. 1300-2500 BP). Previous work has focused mainly on the recent phases, consistent with traces left by the last hunters-gatherers present in the area. However, very little is known about the earlier phases of occupations of the shelter, predominantly associated with the Middle Stone Age (MSA). For a start, the chronology of the MSA units is, to date, completely unknown. The excavated MSA material is dominated by lithic material excavated from two test-trenches respectively in 1954 and in 1998. This has been attributed to the somewhat ill-defined industry of the Pietersburg and still awaits full techno-typological analysis. Finally, the depositional and post-depositional context of the archaeological finds remains to be clarified. This year, we started a new field project at the site, with the following aims: (1) to provide a clearer chronological context for the MSA layers; (2) to clarify the site formation processes; and (3) to technologically re-evaluate the lithic assemblage. Here, we provide some background on the site and the new project alongside some preliminary remarks following our first recently completed fieldwork campaign.

09:40. The Middle Stone Age in Central Africa: using old collections to rethink the Lupemban's definition

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The Middle Stone Age assemblages from the Congo Basin are usually grouped in the Sangoan and the Lupemban complexes. However, the definition of these two complexes mainly rely on the use of shaped tools' typology and, particularly for the Lupemban, on several paradigms linked to the forest environment. After a brief overview of the historical background of the Lupemban, we present a lithic analysis of four lithic assemblages from the Congo Basin stored in Muséum national d'Histoire naturelle. We then discuss our results' implications for the definition of the Lupemban complex.

10:00. Characterising the C-A layers of Sibudu, South Africa, and implications for the MSA cultural sequence in MIS 5

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Over the last decades of research, the Middle Stone Age (MSA) emerges as a key phase concerning the biological and cultural evolution of modern humans. Yet the nature, timing and tempo of triggering early behavioural innovations, such as new technological achievements and symbolic practices, still need a lot more clarification. Great importance to increase our knowledge in this matter plays the exploration of long regional sequences and the extension of the research focus from specific purportedly precocious phases, like the Still Bay (SB) and the Howiesons Poort (HP), to the whole of the MSA. The site of Sibudu Cave, KwaZulu-Natal, South Africa, comprises a long and well-dated sequence of the MSA. Current excavations conducted by the University of Tübingen in the Deep Sounding of Sibudu have yielded MIS 5 lithic assemblages that contribute to the discussion about the driving mechanisms and appearance of technological novelties and the cultural variability in the MSA during MIS 5.

Following the *chaîne opératoire* approach, this paper presents a technological analysis of the lithic artefacts from layers C-A of the Deep Sounding at Sibudu. The knappers during this phase of occupation exploited a range of different raw materials mainly locally available and of variable prominence concerning blank production and tool manufacturing. The tool kit stands out for the presence of bifacial technology, including serrated pieces, but the largest part of the retouched elements concerns a variety of unifacially pointed forms. Various scraper-like forms, as well as denticulates, occur. Furthermore, we explain how the inhabitants of Sibudu at this time focused on the production of laminar elements and developed a reduction strategy to obtain blades and elongated flakes. These strata are characterised by unidirectionally knapped cores with a lateral crest opposite a wider, flat surface that produces a triangular asymmetric volume for exploitation. The configuration of the cores facilitates the production of laminar artefacts with different intended morphological characteristics. Comparisons to the lithic assemblages of other southern African MIS 5 traditions illustrates striking differences regarding the manufacturing and spectrum of tool types as well as the organisation of the reduction strategy. However, our findings also demonstrate that one significant similarity is the aim for laminar end-products. We thus argue that human populations were regionally differentiated due to the distinguished realisation of the technological goal, but they organised themselves over distances with complex systems of connectedness and selective technology transfer. We foster the discussion on the rise and role of innovative technological choices within the southern African MSA.

10:20. No one's home? New evidence for mid to late MIS 3 occupations in the Western Cape (South Africa) from Mertenhof Rockshelter

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The Winter Rainfall Zone (WRZ) of South Africa features a well-resolved archaeological record for the earlier Late Pleistocene (MIS 5-4), particularly in the Western Cape, encompassing among others the Howiesons Poort and Still Bay technocomplexes. In contrast to its rich record during ~120-60 ka little is known about the technological variability during MIS 3 in the WRZ. The ephemeral MSA archaeology of the Western Cape between ~50-25 ka has been perceived as reflecting a depopulation of the area and a sharp break to the beginning of the LSA around ~25-22 ka at Putslaagte 8 and Elands Bay Cave. Here we present new archaeological data from Mertenhof Rockshelter (MRS) located at the eastern edge of the Cederberg mountain, yielding consecutive occupations dated by OSL to ~51-35 ka. The four lithic assemblages analyzed here fill an important gap in the current record, providing a rare diachronic glimpse into the poorly known archaeology of the middle and later part of MIS 3 and help to answer questions on the beginning of the LSA, regional cultural pathways, settlements strategies and population sizes.

10:40. Preliminary results on the late Pleistocene occupation of Iron Pig Rock Shelter in Mpumalanga, South Africa

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Iron Pig Rock Shelter alias “ystervark” was discovered by Alex Schoeman and a group of students in 2016. The site is situated within the Doornkop Nature reserve in eastern Mpumalanga in a cliff of quartzitic sandstone. Although the shelter shows strong evidence of water influence in some parts, others are dry and provide sediments with good preservation. Two excavation campaigns were conducted in 2017 under a joint group of researchers from Witwatersrand University, the German Archaeological Institute (DAI) and the Senckenberg Centre for Human Evolution and Palaeoenvironment (HEP). Although the sediments in the excavation area are not of great depth (max. ~40cm), we identified a total of 6 archaeological layers numbered 1 to 6 from top to bottom. The stratigraphy encompasses a rich archaeological sequence including an Iron Age occupation on top, a Holocene Later Stone Age (LSA) below and a late Pleistocene LSA occupation overlying bedrock. Find categories include ostrich eggshell beads, bones and pottery in the top layers and lithic artifacts, ocher and charcoal throughout the sequence. In the current study we present our preliminary results of a lithic analysis focused on the lowermost layers 5 and 6 predating 12,000 BP. We concentrate on changing trends within the archaeological sequence through time. Furthermore we highlight the scientific relevance of Iron Pig Rock Shelter due to its isolated geographical setting having the nearest comparative assemblages in Swaziland and Limpopo province both several hundred kilometers away.

11:20. Typo-technological analysis of the Later Stone Age bone tool assemblage from Bushman Rock Shelter, South Africa

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Bushman Rock Shelter (BRS) is one of the few sites in Limpopo Province that contains a long, well-stratified late Pleistocene/early Holocene archaeological sequence. The site was initially excavated by A. W. Louw (University of Witwatersrand) and J. F. Eloff (University of Pretoria) and is currently the focus of an ongoing project (dir. G. Porraz et A. Val). This project is twofold since it includes renewed excavations at the site as well as a reappraisal of Eloff's archaeological collections.

The LSA layers, attributed to Robberg and Oakhurst technocomplexes, delivered 59 bone tools including bone points, ornaments, fragments of tusks, intermediate tools, retouchers and knapped tools. The typo-technological analysis provides a detailed descriptions of LSA bone tools and how they were manufactured. The study of the *chaînes opératoires* of pieces demonstrates that the modalities of acquisition of raw materials, exploitation of blanks and production of tools were varied.

11:40. Morpho-functional variability of the late Holocene microlithic backed tools from Pomongwe Cave Matobo, Western Zimbabwe

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This paper studies morphological variability of late Holocene microlithic backed tools (MBTs) at Pomongwe Cave using a morpho-functional perspective, focusing on the Amadzimba phase. The paper employs morpho-technical classification which is based on the identification of the active and passive parts of MBTs that is the back, point and edge. Macro-fracture and macro scar analysis is employed to investigate the function of MBTs and determine whether the variation is connected to function or not. Results show that MBTs during the Amadzimba phase were multi-functional, they were used as projectile weapons, knives and borers. MBTs were also laterally and distolaterally hafted as barbs on an arrow shaft thus, MBT's variability was connected to function.

12:00. The emergence of herding populations in southern Africa and in the Shashe Limpopo Confluence area (South Africa)

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For this communication, we will present the different hypotheses currently debated on the emergence of herding in southern Africa. In a second part, we will focus on the Shashe-Limpopo Confluence Area to reevaluate the archaeological context and open a discussion on the modalities of herding appearance in this area.

12:20. Characterisation of colouring materials and rock art pigments in the Erongo Mountains (Namibia)

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Erongo mountains, central Namibia, host numerous rock paintings of uncertain chronology. The unearthing of colouring materials and tools bearing pigments traces in layers dated back to approximately 3,000 BP, at the ornate archaeological site of Leopard Cave (Erongo, Namibia), supports the existence of a *chaîne opératoire* for rock art pigments during the pre-pottery LSA period. The study aims at providing new insights into the archaeological context of the paintings of Erongo Mountains through analyses of rock art pigments and archaeological colouring materials.

12:40. Humans, not frogs: Dorothea Bleek and her suggested illustrations of myth in South African rock art

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Following her belief that some San (Bushman) rock art illustrated myth, Dorothea Bleek, the famous daughter of Dr W.H.I. Bleek, suggested that some copies by Helen Tongue depicted specific |Xammyths. Dorothea Bleek argued that two copies showed people transforming into frogs: an event which occurs in |Xam tales of the 'New Maiden and the Rain'. A new analysis of the copies and original rock paintings reveal that the 'frogs' are actually humans, meaning that the images require a new interpretation.

13:00. Hunter-gatherer lithic production and rock paintings in Changalane Administrative Post: Maputo Province, southern Mozambique

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Mozambican Later Stone Age (LSA) remains poorly explored and its archaeological heritage is still largely explained in terms of better-known sequences of other southern African countries. Southern Mozambique has very few sites with archaeological evidences related to hunter-gatherers. The lithic assemblages from DAIM I and DAIM II rock-shelters in Changalane Administrative Post (Namaacha District, Maputo Province) becomes, apart from the rock art, one of the few sources of explanation of the use of the rock shelters in the area. Lithic analysis and radiocarbon dating show that formal tools were produced or used in the area, as part of the hunting and gathering way of life. Rock paintings that are aspects of symbolic behavior of foragers is also present in DAIM I, which marked their passage and represents a unique archaeological sequence of chronological and symbolic events during the Holocene. To build an understanding of the LSA sequence of the area, this communication considers the sequence of the occupation of the sites based on the typological features recognized on the lithic and other artefacts. Diagnostic cultural material at DAIM I and DAIM II strongly suggests a continuity of the hunter-gatherer presence through the first millennium AD, and also maintenance of the LSA way of life in the Lebombo Mountain range in Goba District and surrounding areas.
