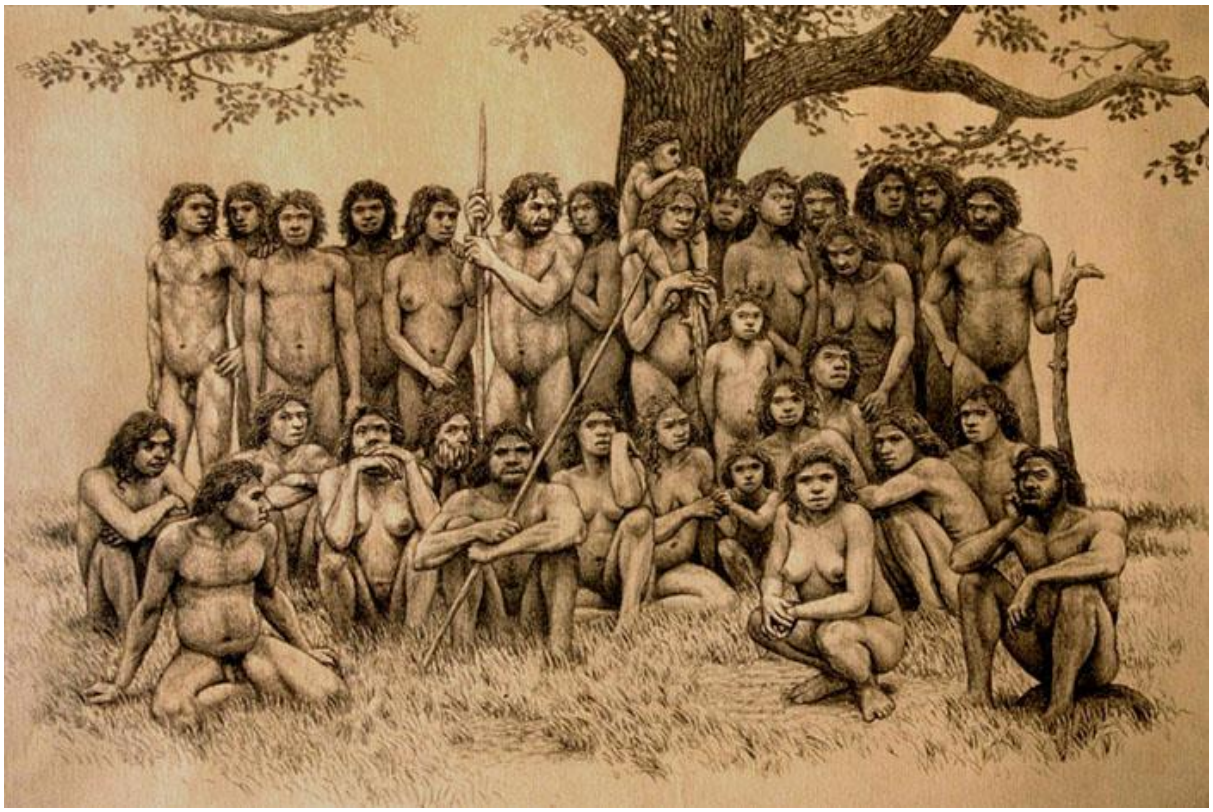
INSTITUTE OF ARCHAEOLOGY AND DEPARTMENT OF ANTHROPOLOGY

ARCL0212 The Archaeology of Early Human Origins

Archaeology (15 credits): ARCL0212

MODULE HANDBOOK 2023-24



The people of Sima Los Huesos – Mauricio Anton

Coordinator: Matt Pope

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Office hours: please email to make an in-person or online appointment.

IMPORTANT INFORMATION REGARDING ASSESSMENTS:

The **coursework coversheet** is available on the course Moodle pages and here: https://www.ucl.ac.uk/archaeology/current-students under "Policies, Forms and Guidelines".

Please enter **your five-digit candidate code on the coversheet and *in the subject line*** when you upload your work in Moodle.

Please use **your five-digit candidate code as the name of the file** you submit.

For instructions on coursework submission, IoA referencing guidelines and marking criteria, as well as UCL policies on penalties for late submission, over-length work, the use of text generation software please refer to:

https://www.ucl.ac.uk/archaeology/current-students/ioa-student-handbook/13-information-assessment

https://www.ucl.ac.uk/archaeology/current-students/ioa-study-skills-guide/referencing-effectively-and-ioa-guidelines

https://www.ucl.ac.uk/students/exams-and-assessments/academic-integrity
https://library-guides.ucl.ac.uk/referencing-plagiarism/acknowledging-AI

1. MODULE OVERVIEW

Module description

The module will provide a detailed account of the Palaeolithic archaeological record associated with the evolution of hominins in Africa, Asia and Europe. We will cover from the origins of the archaeological record, perhaps 3.3 million years ago, to the Middle Palaeolithic or Middle Stone Age up to 70 thousand years ago. The module follows a chronological rather than thematic structure, in order to provide the broader context of hominin behaviour, with issues such as climate change embedded within each period rather than treated as standalone topics. Due to preservational bias, the module will principally focus on the stone artefact record, but we will also look at other aspects of material culture, fauna, occasional archaeobotanical remains, and intra-site spatial features. The module will cover the evolution of hominin behaviour with a particular emphasis on technology, subsistence, and sociality.

Module Aims

On successful completion of this module, students will: - recognize the major phases of hominin behaviour and what underpins their distinction - be able to critically appraise the strengths and limits of the different methods used to reconstruct hominin behaviour - have an understanding of the social and cognitive changes that occurred during the evolution of our genus

Learning Outcomes

By the end of this module, students will have learnt: - first hand familiarity with Lower and Middle Palaeolithic stone tool evidence - to construct narrative arguments in written form - skills in visual display and presentation

Methods of Assessment

This module is assessed by means of: A poster (500 words max) (30%) - An essay – of no more than 2,500 words (70%)

The deadline for the Poster is **20th November 2023**

The deadline for the essay is **15th January 2024**

Communications

- **The Course Moodle Page is the main hub** for this course.
- Important information will be posted by staff in the **Announcements section of the Moodle page** and you will automatically receive an email notification for these.
- Please post any general queries relating to module content, assessments and administration **in the MS Teams Module forum** (The forum will be checked regularly.

For personal queries, please contact the co-ordinator by email.

Week-by-week summary

Week	Date		Subject	Lead
1	4	Oct	Introduction to the Archaeology of early Human Origins	Matt Pope
2	11	Oct	The Archaeology of Primates and the Lomekwian	Matt Pope
3	18	Oct	The Oldowan	Matt Pope
4	25	Oct	The Developed Oldowan and Earliest Acheulean	Matt Pope
5	1	Nov	The Acheulean and it's limits	Matt Pope
6	8	Nov	**Reading Week**	
7	15	Nov	The Late Acheulean	Matt Pope
8	22	Nov	Focus on Northern Europe MIS 15 to 11	Matt Pope
9	29	Nov	The Early Middle Palaeolithic and the Early MSA	Matt Pope
10	6	Dec	Innovation in the Middle Palaeolithic & the Middle Stone Age	Matt Pope
11	13	Dec	Focus on the Archaeological Record of MIS 5	Matt Pope

Class Structure

The module is taught through lectures followed by discussion or practical in a weekly two-hour class. Students will be required to undertake set readings, complete pre-class activities and make contributions to the discussions.

Workload

This is a 15-credit module which equates to 150 hours of learning time including session preparation, background reading, and researching and writing your assignments. With that in mind you should expect to organise your time in roughly this way:

20 hours	*Staff-led teaching sessions (lectures, seminars, tutorials, etc.)*
80 hours	*Self-guided session preparation (reading, listening, note-taking and online activities), about 6 hours a week*
13 hours	*Assessment 1: Poster*
37 hours	*Assessment 2: Essay*

Feedback

In trying to make this module as effective as possible, we welcome feedback from students. You will be asked to give your views on the module in an anonymous questionnaire which will be circulated at the end of the course. If students are concerned about any aspect of this module we hope they will feel able to talk to the Module Coordinator, but if they feel this is not appropriate, they should contact the Academic Administrator (Judy Medrington), or the Chair of Teaching Committee (Rachel King)

2. METHODS OF ASSESSMENT

Each assignment and possible approaches to it will be discussed in class, in advance of the submission deadline. If students are unclear about the nature of an assignment, they should discuss this with the module co-ordinator in advance (via office hours or class Moodle forum). You will receive feedback on your written coursework via Moodle, and have the opportunity to discuss your marks and feedback with the co-ordinator in their office hours. For more details see the 'Assessment' section on Moodle. The IoA marking criteria can be found in the IoA Student Handbook (Section 13: Information on assessment). The IoA Study Skills Guide provides useful guidance on writing different types of assignment. Please note that late submission, exceeding the maximum word count and academic misconduct (plagiarism) will be penalized and can significantly reduce the mark awarded for the assignment and/or overall module result.

Assessment 1: **Poster** (30% of total mark)
Students will create an A2 sized poster in Powerpoint on a topic of their choice as if for a conference. A list of potential topics will be provided, which are based on the classes and reading from the first 4 half of the module. The poster should have a maximum of **500 words** (not including the reference list). A font size of about 50pt it appropriate for the main text in a poster that size. Portrait or landscape orientation is optional.
The deadline for the Poster is **20th November 2023**

Assessment 2: Essay (70% of Total Mark)
Students will write a **2500 word** limit essay on a questions that will be discussed in Week 4..
The deadline for the essay is **15th January 2024**

COURSEWORK
Detailed guidance on the production, submission and assessment of coursework can be found in Chapter 13 of the Institute of Archaeology Student Handbook and the Institute of Archaeology Study Skills Guide. Please note that there are **penalties for late and over-length coursework, and for academic misconduct including plagiarism**. In some circumstances these penalties can be severely detrimental to your degree result, so **if in doubt or difficulty always seek guidance from a relevant member of staff**, such as the Course Coordinator, Degree Coordinator, Master's Tutor or Institute of Archaeology Academic Administrator.

Use of AI Applications and Software
The use of AI to generate written content is not allowed for production of the essay assessments on this course and will be penalised. However, the use of software for language and writing review and improvement is permitted, but the software and the way it has been used must be indicated in the relevant boxes on the coursework coversheet. UCL defines language and writing review as checking "areas of academic writing such as structure, fluency, presentation, grammar, spelling, punctuation, and language translation". Should you be unsure about your use of AI, or wish to use AI in a way not covered by this statement, please speak to one of the tutors.

LIBRARIES AND OTHER RESOURCES
To help you research for the essays essential reading for this course is available online through UCL's e-library. However, further reading not available online will be found in the library of the Institute of Archaeology and UCL's Science Library (particularly the

Anthropology Section). Libraries outside of UCL which have relevant holdings include those at the University of London at Senate House and the British Library.

Coursework will be marked and returned within four weeks of the official submission deadline.

3. CLASS DETAILS

Week 1: Introduction to the Archaeology of early Human Origins

In this session we explore the frameworks for studying the archaeology of human evolution. How do we define the geological timescale and backdrop of global climate change? How do we define 'human' in the context of this course? How do stone tools contribute to our understanding of the fossil human record?

Regional Synthesis

Barham, L. and Mitchell, P., 2008. The First Africans: African archaeology from the earliest toolmakers to most recent foragers. Cambridge University Press.

Dennell, R., 2008. The Palaeolithic Settlement of Asia. Cambridge University Press.

Gamble, C., 2008. The Palaeolithic Societies of Europe, 2nd edition. Cambridge University Press.

Frameworks

Dunbar, R.I., 2016. The social brain hypothesis and human evolution. In the Oxford Research Encyclopedia of Psychology.

Tomasello, M., Melis, A.P., Tennie, C., Wyman, E. and Herrmann, E., 2012. Two key steps in the evolution of human cooperation: The interdependence hypothesis. Current Anthropology, 53(6), pp.673-692.

Whiten, A., Biro, D., Bredeche, N., Garland, E.C. and Kirby, S., 2022. The emergence of collective knowledge and cumulative culture in animals, humans and machines. Philosophical Transactions of the Royal Society B, 377(1843), p.20200306.

Galway-Witham, J., Cole, J. and Stringer, C., 2019. Aspects of human physical and behavioural evolution during the last 1 million years. *Journal of Quaternary Science*, *34*(6), pp.355-378.

Odling-Smee, J., Erwin, D.H., Palkovacs, E.P., Feldman, M.W. and Laland, K.N., 2013. Niche construction theory: a practical guide for ecologists. *The Quarterly review of biology*, *88*(1), pp.3-28.

Railsback, L.B., Gibbard, P.L., Head, M.J., Voarintsoa, N.R.G. and Toucanne, S., 2015. An optimized scheme of lettered marine isotope substages for the last 1.0 million years, and the climatostratigraphic nature of isotope stages and substages. *Quaternary Science Reviews*, *111*, pp.94-106.

Lithic Technology Primers

Andrefsky, Jr., W. 1998. Lithics: Macroscopic Approaches to Analysis. Cambridge: Cambridge University Press, Cambridge Manuals in Archaeology. IOA ISSUE DESK: KA AND.

Inizan, M.-L., Roche, H. and Tixier, J. 1992. Technology of Knapped Stone. Meudon: CREP. IOA ISSUE DESK: DA INI.

Odell, G.H., 2004. Lithic Analysis. New York/London: Kluwer Academic/Plenum. IOA ISSUE DESK: IOA KA ODE.

Week 2: The Archaeology of Primates and the Lomekwian

We will explore the burgeoning record of non-human primate archaeology and attempts to teach non-human primates to make stone tools. We will then consider both of these in relation to the possibility that hominin genera other than Homo made tools. We will look at the putative earliest archaeological record from the site of Lomekwi in east Africa and consider the manipulative capabilities of Australopithecus afarensis.

Boesch, C., Bombjaková, D., Meier, A. and Mundry, R., 2019. Learning curves and teaching when acquiring nut-cracking in humans and chimpanzees. Scientific Reports 9: 1515.

Domínguez-Rodrigo, M. and Alcalá, L., 2016. 3.3-million-year-old stone tools and butchery traces? More evidence needed. PaleoAnthropology 2016: 46-53.

Harmand, S., Lewis, J.E., Feibel, C.S., Lepre, C.J., Prat, S., Lenoble, A., Boës, X., Quinn, R.L., Brenet, M., Arroyo, A. and Taylor, N., 2015. 3.3-million-year-old stone tools from Lomekwi 3, West Turkana, Kenya. Nature 521: 310-315.

Haslam, M., Hernandez-Aguilar, R.A., Proffitt, T., Arroyo, A., Falótico, T., Fragaszy, D., Gumert, M., Harris, J.W., Huffman, M.A., Kalan, A.K. and Malaivijitnond, S., 2017. Primate archaeology evolves. Nature Ecology & Evolution 1: 1431-1437.

Proffitt, T., Haslam, M., Mercader, J.F., Boesch, C. and Luncz, L.V., 2018. Revisiting Panda 100, the first archaeological chimpanzee nut-cracking site. Journal of Human Evolution, 124, pp.117-139.

Whiten, A., 2015. Experimental studies illuminate the cultural transmission of percussive technologies in Homo and Pan. Philosophical Transactions of the Royal Society B: Biological Sciences 370: 20140359.

Week 3: The Oldowan

How is the Oldowan defined? Do Oldowan archaeological sites reflect the use of home-bases and the systematic acquisition and butchery of mammal carcasses? Some further questions to address will be: How did early Oldowan knappers acquire the skills for freehand percussion? And did hominins leave Africa prior to 2 million years ago?

Braun, D.R., Aldeias, V., Archer, W., Arrowsmith, J.R., Baraki, N., Campisano, C.J., Deino, A.L., DiMaggio, E.N., Dupont-Nivet, G., Engda, B., Feary, D.A., Garello, D.I., Kerfelew, Z., McPherron, S.P., Patterson, D.B., Reeves, J., Thompson, J.C., Reed, K.E. 2019. Earliest known Oldowan artifacts at> 2.58 Ma from Ledi-Geraru, Ethiopia, highlight early technological diversity. Proceedings of the National Academy of Sciences 116: 11712-11717.

Delagnes, A. and Roche, H., 2005. Late Pliocene hominid knapping skills: the case of Lokalalei 2C, West Turkana, Kenya. Journal of Human Evolution 48: 435-472.

Stout, D., Semaw, S., Rogers, M.J. and Cauche, D., 2010. Technological variation in the earliest Oldowan from Gona, Afar, Ethiopia. Journal of Human Evolution 58: 474-491.

Stout, D., Quade, J., Semaw, S., Rogers, M.J. and Levin, N.E., 2005. Raw material selectivity of the earliest stone toolmakers at Gona, Afar, Ethiopia. Journal of Human Evolution 48: 365- 380. 6 Scardia, G., Parenti, F., Miggins, D.P., Gerdes, A., Araujo, A.G. and Neves, W.A., 2019. Chronologic constraints on hominin dispersal outside Africa since 2.48 Ma from the Zarqa Valley, Jordan. Quaternary Science Reviews 219: 1-19.

Sahnouni, M., Parés, J.M., Duval, M., Cáceres, I., Harichane, Z., Van der Made, J., PérezGonzález, A., Abdessadok, S., Kandi, N., Derradji, A., Medig, M., Boulaghraif, K., Semaw, S. 2018. 1.9-million-and 2.4-million-year-old artifac

Week 4: The Developed Oldowan and Earliest Acheulean

Is there a change in character of the Oldowan around 2 million years ago when the earliest Homo erectus appear, or is it essentially the same lifeway throughout? What are the circumstances surrounding the emergence of the Acheulean ~1.65 ma? We shall consider the faunal and environmental associations of early Acheulean tools and how they differ in their affordances from those of the Oldowan. We will then look at the social organization of early Acheulean hominins and the extent to which there is an early dispersal of this culture

Titton, S., Barsky, D., Bargalló, A., Serrano-Ramos, A., Vergès, J.M., Toro-Moyano, I., SalaRamos, R., Solano, J.G. and Jimenez Arenas, J.M., 2020. Subspheroids in the lithic assemblage of Barranco León (Spain): Recognizing the late Oldowan in Europe. PLOS One 15: e0228290.

Hayden, B., 2008. What were they doing in the Oldowan? An ethnoarchaeological perspective on the origins of human behavior. Lithic Technology 33: 105-139..

de la Torre, I. and Mora, R., 2018. Technological behaviour in the early Acheulean of EF-HR (Olduvai Gorge, Tanzania). Journal of Human Evolution, 120, pp.329-377.

de la Torre, I. and Mora, R., 2018. Oldowan technological behaviour at HWK EE (Olduvai Gorge, Tanzania). Journal of Human Evolution 120: 236-273.

Hatala, K.G., Roach, N.T., Ostrofsky, K.R., Wunderlich, R.E., Dingwall, H.L., Villmoare, B.A., Green, D.J., Harris, J.W., Braun, D.R. and Richmond, B.G., 2016. Footprints reveal direct evidence of group behavior and locomotion in Homo erectus. Scientific Reports 6: 1-9. 7

Key, A.J. and Lycett, S.J., 2017. Reassessing the production of handaxes versus flakes from a functional perspective. Archaeological and Anthropological Sciences 9: 737-753.

Leader, G.M., Kuman, K., Gibbon, R.J. and Granger, D.E., 2018. Early Acheulean organised core knapping strategies ca. 1.3 Ma at Rietputs 15, Northern Cape Province, South Africa. Quaternary International, 480, pp.16-28.

Oliver, J.S., Plummer, T.W., Hertel, F. and Bishop, L.C., 2019. Bovid mortality patterns from Kanjera South, Homa Peninsula, Kenya and FLK-Zinj, Olduvai Gorge, Tanzania: Evidence for habitat mediated variability in Oldowan hominin hunting and scavenging behavior. Journal of Human Evolution 131: 61-75.

Pante, M.C., Njau, J.K., Hensley-Marschand, B., Keevil, T.L., Martín-Ramos, C., Peters, R.F. and de la Torre, I., 2018. The carnivorous feeding behavior of early Homo at HWK EE, Bed II, Olduvai Gorge, Tanzania. Journal of Human Evolution 120: 215-235.

Week 5: The Acheulean and it's limits

By the beginning of the middle Pleistocene (774 ka), the Acheulean is found from southern Africa up to Europe, and across to India. The Levantine record documents a distinct facies of the Acheulean at this time, said to represent a broader dispersal out of Africa. At many classic Acheulean sites in east Africa bifaces number in their thousands. We will examine the lifeway and sociality that gave rise to this pervasive culture and whether this middle facies of the Acheulean represents a dispersal. Since Hallam Movius first observed in 1948 that the Acheulean bifaces so abundant in Africa and western Eurasia were scarce in the east, there has been a debate as to whether this distinction is real and if it reflects environmental, cultural, or biological differences.

Gallotti, R. and Mussi, M., 2017. Two Acheuleans, two humankinds: From 1.5 to 0.85 Ma at Melka Kunture (Upper Awash, Ethiopian highlands). Journal of Anthropological Sciences 95: 1-46.

Li, H., Kuman, K., Lotter, M.G., Leader, G.M. and Gibbon, R.J., 2017. The Victoria West: earliest prepared core technology in the Acheulean at Canteen Kopje and implications for the cognitive evolution of early hominids. Royal Society Open Science 4: 170288.

Li, H., Lotter, M.G., Kuman, K., Lei, L. and Wang, W., 2021. Population dynamics during the Acheulean at~ 0.8 Ma in East and Southeast Asia: Considering the influence of two geological cataclysms. Palaeogeography, Palaeoclimatology, Palaeoecology 562: 109927.

Moncel, M.H., Despriée, J., Courcimaut, G., Voinchet, P. and Bahain, J.J., 2020. La Noira site (Centre, France) and the technological behaviours and skills of the earliest Acheulean in Western Europe between 700 and 600 ka. Journal of Paleolithic Archaeology 3: 255-301.

Sharon, G., Alperson-Afil, N. and Goren-Inbar, N., 2011. Cultural conservatism and variability in the Acheulian sequence of Gesher Benot Ya 'aqov. Journal of Human Evolution, 60(4), pp.387-397.

Shipton, C., 2018. Biface knapping skill in the East African Acheulean: Progressive trends and random walks. African Archaeological Review, 35(1), pp.107-131.

Week 7: The Late Acheulean and its limits

From around 0.6 ma Acheulean technology changes again with very finely made bifaces. We consider whether this coincides with other changes in hominin behaviour and if it represents a speciation or dispersal event, or alternatively what might be driving similar patterns of anagenetic change in different regions.

Carbonell, E. and Mosquera, M., 2006. The emergence of a symbolic behaviour: the sepulchral pit of Sima de los Huesos, Sierra de Atapuerca, Burgos, Spain. Comptes rendus palévol, 5(1-2), pp.155-160.

Davis, R., Ashton, N., Hatch, M., Hoare, P.G. and Lewis, S.G., 2021. Palaeolithic archaeology of the Bytham River: human occupation of Britain during the early Middle Pleistocene and its European context. Journal of Quaternary Science, 36(4), pp.526-546.

Hérisson, D., Airvaux, J., Lenoble, A., Richter, D., Claud, E. and Primault, J., 2016. Between the northern and southern regions of western Europe: the Acheulean site of La Grande Vallée (Colombiers, Vienne, France). Quaternary International, 411, pp.108-131.

Sharon, G., Feibel, C., Alperson-Afil, N., Harlavan, Y., Feraud, G., Ashkenazi, S. and Rabinovich, R., 2010. New evidence for the northern Dead Sea rift Acheulian. PaleoAnthropology, 2010, pp.79-99.

Shipton, C., 2019. The evolution of social transmission in the Acheulean. In Overmann, K. and Coolidge, F. (eds.) Squeezing Minds from Stones: Cognitive Archaeology and the Evolution of the Human Mind, OUP, pp.332-354

Stout, D., Apel, J., Commander, J. and Roberts, M., 2014. Late Acheulean technology and cognition at Boxgrove, UK. Journal of Archaeological Science 41: 576-590.

Week 8: Focus on Northern Europe MIS 15 to 11

Northern Europe offers a well-researched and rich record of Late Acheulean sites which lie at the edge of the human range during the Early middle Pleistocene. What does the appearance of bifocal technology in northern Europe mean in evolutionary terms? How should we interpret variation in biface form during different time periods?

Antoine, P., Moncel, M.H., Limondin-Lozouet, N., Locht, J.L., Bahain, J.J., Moreno, D., Voinchet, P., Auguste, P., Stoetzel, E., Dabkowski, J. and Bello, S.M., 2016. Palaeoenvironment and dating of the Early Acheulean localities from the Somme River basin (Northern France): new discoveries from the high terrace at Abbeville-Carrière Carpentier. Quaternary Science Reviews, 149, pp.338-371.

García-Medrano, P., Martinón-Torres, M. and Ashton, N., 2023. Introduction to special issue "Humans in transition: The occupation of Western Europe, 600–400 Ka". Journal of Human Evolution, 180, p.103388.

Key, A., Lauer, T., Skinner, M.M., Pope, M., Bridgland, D.R., Noble, L. and Proffitt, T., 2022. On the earliest Acheulean in Britain: first dates and in-situ artefacts from the MIS 15 site of Fordwich (Kent, UK). Royal Society Open Science, 9(6), p.211904.

Moncel, MH, Despriée, J., Voinchet, P., Courcimault, G., Hardy, B., Bahain, JJ, Puaud, S., Gallet, X. and Falguères, C., 2016. The Acheulean workshop of the Noira (France, 700 ka) in the European technological context. Quaternary International , 393 , pp.112-136.

Pope, M., Roberts, M. and Parfitt, S., 2020. The Horse Butchery Site GTP17: A high-resolution record of Lower Palaeolithic hominin behaviour at Boxgrove, UK.

Shipton, C. and White, M., 2020. Handaxe types, colonization waves, and social norms in the British Acheulean. Journal of Archaeological Science: Reports, 31, p.102352.

Week 9: The Early Middle Palaeolithic and the Early MSA

We will review the diversity of hominin species and cultures across the world during the early Middle Palaeolithic and the Early MSA. Where and under what circumstances do prepared core technologies develop and spread? What is their adaptive significance?

During the same period we changes in populations in Africa and Europe with the emergence of *Homo sapiens* and *Homo neanderthlensis*? Can we relate technological innovation to populations?

Hopkinson, T., 2007. The transition from the Lower to the Middle Palaeolithic in Europe and the incorporation of difference. Antiquity 81: 294-307.

Rots, V., Van Peer, P. and Vermeersch, P.M., 2011. Aspects of tool production, use, and hafting in Palaeolithic assemblages from Northeast Africa. Journal of Human Evolution 60: 637-664.

Shimelmitz, R. and Kuhn, S.L., 2018. The toolkit in the core: There is more to Levallois production than predetermination. Quaternary International, 464, pp.81-91.

Stiner, M.C., Barkai, R. and Gopher, A., 2009. Cooperative hunting and meat sharing 400–200 kya at Qesem Cave, Israel. Proceedings of the National Academy of Sciences, 106(32),pp.13207-13212.

Moncel, M.H., Ashton, N., Arzarello, M., Fontana, F., Lamotte, A., Scott, B., Muttillo, B., Berruti, G., Nenzioni, G., Tuffreau, A. and Peretto, C., 2020. Early Levallois core technology between marine isotope stage 12 and 9 in Western Europe. Journal of human Evolution, 139, p.102735.

Scerri, E.M., Thomas, M.G., Manica, A., Gunz, P., Stock, J.T., Stringer, C., Grove, M., Groucutt, H.S., Timmermann, A., Rightmire, G.P. and d'Errico, F., 2018. Did our species evolve in subdivided populations across Africa, and why does it matter?. *Trends in ecology & evolution*, *33*(8), pp.582-594.

Tryon, C.A., McBrearty, S. and Texier, P.J., 2005. Levallois lithic technology from the Kapthurin formation, Kenya: Acheulian origin and Middle Stone Age diversity. AfricanArchaeological Review 22: 199-229.

Zaidner, Y. and Weinstein-Evron, M., 2020. The emergence of the Levallois technology in the Levant: A view from the Early Middle Paleolithic site of Misliya Cave, Israel. *Journal of human evolution*, *144*, p.102785.

Week 10: Innovation in the Middle Palaeolithic and the Middle Stone Age

Marine Isotope Stage 6 sees the emergence of bead wearing in *Homo sapiens*, possible ritualistic behaviour in Neanderthals, and the occupation of high altitude by Denisovans. There are also novel subsistence and stone working practices that emerge during this period, with distinct regionalization in Africa argued to have had an important effect on the evolution of our species.

Jaubert, J., Verheyden, S., Genty, D., Soulier, M., Cheng, H., Blamart, D., Burlet, C., Camus, H., Delaby, S., Deldicque, D. and Edwards, R.L., 2016. Early Neanderthal constructions deep in Bruniquel Cave in southwestern France. Nature, 534(7605), pp.111-114.

Marean, C.W., Bar-Matthews, M., Bernatchez, J., Fisher, E., Goldberg, P., Herries, A.I., Jacobs, Z., Jerardino, A., Karkanas, P., Minichillo, T. and Nilssen, P.J., 2007. Early human use of marine resources and pigment in South Africa during the Middle Pleistocene. Nature, 449(7164), pp.905-908.

Sehasseh, E.M., Fernandez, P., Kuhn, S., Stiner, M., Mentzer, S., Colarossi, D., Clark, A.,Lanoe, F., Pailes, M., Hoffmann, D. and Benson, A., 2021. Early Middle Stone Age personal ornaments from Bizmoune Cave, Essaouira, Morocco. Science Advances, 7(39), p.eabi8620.

Dapschauskas, R., Göden, M.B., Sommer, C. and Kandel, A.W., 2022. The Emergence of Habitual Ochre Use in Africa and its Significance for The Development of Ritual Behavior During The Middle Stone Age. Journal of World Prehistory, pp.1-87.

Shunkov, M.V., Kozlikin, M.B. and Derevianko, A.P., 2020. Dynamics of the Altai Paleolithic industries in the archaeological record of Denisova Cave. Quaternary International, 559

Taylor, N., 2022. Riddles wrapped inside an enigma. Lupemban MSA technology as a rainforest adaptation: revisiting the lanceolate point. Philosophical Transactions of the Royal Society B, 377(1849), p.20200484.

Week 11: Focus on the Archaeological Record of MIS 5

Behavioural complexity at the end of Marine Isotope 5 is thought by many to mark the culmination of human cognitive evolution. We will examine the evidence, whether we can support this claim, and whether it is as true for Neanderthals as it is for Homo sapiens.

Bar-Yosef Mayer, D.E., Vandermeersch, B. and Bar-Yosef, O., 2009. Shells and ochre in Middle Paleolithic Qafzeh Cave, Israel: indications for modern behavior. Journal of Human Evolution, 56(3), pp.307-314.

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