

References

Afrika

CHIRIKURE 2008

Shadreck Chirikure & Innocent Pikirayi, *Inside and outside the dry stone walls, Revisiting the material culture of Great Zimbabwe*. [Antiquity 82 \(2008\), 976–993](#).

‘Any study of Great Zimbabwe has to rely a great deal on re-examining and re-assessing the work of early investigators, the men who removed all the most important finds from the ruins and stripped them of so much of their deposits’ (Garlake 1973: 14). The authors have here done us a great service in reviewing the surviving archaeological evidence from this world famous site. They challenge the structuralist interpretation – in which different parts of the site were allocated to kings, priests, wives or to circumcision rituals – and use the architectural, stratigraphic and artefactual evidence accumulated over the years to present a new sequence. The early enclosures on the hill, the Great Enclosure and the valley enclosures now appear as the work of successive rulers, each founding a new residence and power centre in accord with Shona practice.

Keywords: East Africa | Great Zimbabwe | second millennium AD | structural | symbolic archaeology

LOFTUS 2019

Emma Loftus, Julia Lee-Thorp, Melanie Leng, Curtis Marean & Judith Sealy, *Seasonal scheduling of shellfish collection in the Middle and Later Stone Ages of southern Africa*. [Journal of Human Evolution 128 \(2019\), 1–16](#).

This study assesses the seasonal scheduling of shellfish harvesting among hunter-gatherer populations along the southernmost coast of South Africa, based on a large number of serial oxygen isotope analyses of marine mollusk shells from four archaeological sites. The south coast of South Africa boasts an exceptional record of coastal hunter-gatherer occupation spanning the Holocene, the last glacial cycle and beyond. The significance of coastal adaptations, in this region in particular, for later modern human evolution has been prominently debated. Shellfishing behaviors are an important focus for investigation given the dietary and scheduling implications and the abundant archaeological shell remains in numerous sites. Key to better understanding coastal foraging is whether it was limited to one particular season, or year-round. Yet, this has proven very difficult to establish by conventional archaeological Methods. This study reconstructs seasonal harvesting patterns by calculating water temperatures from the final growth increment of shells. Results from two Later Stone Age sites, Nelson Bay Cave (together with the nearby Hoffman’s Robberg Cave) and Byneskranskop 1, show a pronounced cool season signal, which is unexpected given previous ethnographic documentation of summer as the optimal season for shellfishing activities and inferences about hunter-gatherer scheduling and mobility in the late Holocene. Results from two Middle Stone Age sites, Klasies River and Pinnacle Point 5–6, show distinct seasonal patterns that likely reflect the seasonal availability of resources in the two locations. The Pinnacle Point 5–6 assemblage, which spans the MIS5-4 transition, records a marked shift in shellfishing seasonality at c. 71 ka that aligns with

other indications of archaeological and environmental change at this time. We conclude that the scheduling and intensity of shellfishing in this region is affected by a suite of factors, including environmental and cultural drivers, rather than a single variable, such as population growth.

Keywords: Middle Stone Age | Later Stone Age | Shellfishing | Oxygen isotopes | Seasonality | Sclerochronology

SCHEINFELDT 2019

Laura B. Scheinfeldt et al., *Genomic evidence for shared common ancestry of East African hunting-gathering populations and insights into local adaptation*. *PNAS* **116** (2019), 4166–4175.

pnas116-04166-Supplement1.pdf, pnas116-04166-Supplement2.csv, pnas116-04166-Supplement3.csv, pnas116-04166-Supplement4.csv

Laura B. Scheinfeldt, Sameer Soi, Charla Lambert, Wen-Ya Ko, Aoua Coulibaly, Alessia Ranciaro, Simon Thompson, Jibril Hirbo, William Beggs, Muntaser Ibrahim, Thomas Nyambo, Sabah Omar, Dawit Woldemeskel, Gurja Belay, Alain Froment, Junhyong Kim & Sarah A. Tishkoff

Anatomically modern humans arose in Africa $\approx 300,000$ years ago, but the demographic and adaptive histories of African populations are not well-characterized. Here, we have generated a genomewide dataset from 840 Africans, residing in western, eastern, southern, and northern Africa, belonging to 50 ethnicities, and speaking languages belonging to four language families. In addition to agriculturalists and pastoralists, our study includes 16 populations that practice, or until recently have practiced, a hunting-gathering (HG) lifestyle. We observe that genetic structure in Africa is broadly correlated not only with geography, but to a lesser extent, with linguistic affiliation and subsistence strategy. Four East African HG (EHG) populations that are geographically distant from each other show evidence of common ancestry: the Hadza and Sandawe in Tanzania, who speak languages with clicks classified as Khoisan; the Dahalo in Kenya, whose language has remnant clicks; and the Sabue in Ethiopia, who speak an unclassified language. Additionally, we observed common ancestry between central African rainforest HGs and southern African San, the latter of whom speak languages with clicks classified as Khoisan. With the exception of the EHG, central African rainforest HGs, and San, other HG groups in Africa appear genetically similar to neighboring agriculturalist or pastoralist populations. We additionally demonstrate that infectious disease, immune response, and diet have played important roles in the adaptive landscape of African history. However, while the broad biological processes involved in recent human adaptation in Africa are often consistent across populations, the specific loci affected by selective pressures more often vary across populations.

Keywords: African hunter-gatherers | African diversity | population genetics | natural selection | human evolution

Significance: African populations have been underrepresented in human genomics research yet are important for understanding modern human origins and the genetic basis of adaptive traits. Here we analyze a genome-wide dataset in 840 ethnically and geographically diverse Africans. We find that geographically distant hunter-gatherer populations from East Africa share unique common ancestry and we see strong signatures of local adaptation near genes that play a role in immune response, as well as lipid and glucose metabolism.

SMITH 2019

Geoff M. Smith, Karen Ruebens, Sabine Gaudzinski-Windheuser & Teresa E. Steele, *Subsistence strategies throughout the African Middle Pleistocene, Faunal evidence for behavioral change and continuity*

across the Earlier to Middle Stone Age transition. Journal of Human Evolution **127** (2019), 1–20.

The African Middle Pleistocene (781–126 ka) is a key period for human evolution, witnessing both the origin of the modern human lineage and the lithic turnover from Earlier Stone Age (ESA) Acheulean bifacial tools to Middle Stone Age (MSA) prepared core and point technologies. This ESA/MSA transition is interpreted as representing changing landscape use with greater foraging distances and more active hunting strategies. So far, these behavioral inferences are mainly based on the extensive stone tool record, with only a minor role for site-based and regional faunal studies. To provide additional insights into these behavioral changes, this paper details a pan-African metastudy of 63 Middle Pleistocene faunal assemblages from 40 sites. A hierarchical classification system identified 26 well-contextualized assemblages with quantitative paleontological and/or zooarcheological data available for detailed comparative analyses and generalized linear mixed modeling. Modeling of ungulate body size classes structured around three dimensions (context, antiquity and technology) illustrates no one-to-one correlation between changes in lithic technology (Acheulean vs. MSA) and changes in prey representation. All assessed faunal assemblages are dominated by medium-sized bovids, and variations between smaller and larger body size classes are linked to site context (cave vs. open-air), with an increase in cave sites during the Middle Pleistocene. Current data do not signal a broadening of the hominin dietary niche during the Middle Pleistocene; no meaningful variation was visible in the exploitation of smaller-sized bovids or dangerous game, with coastal resources exploited when available. Proportions of anthropogenic bone surface modifications, and hence carcass processing intensity, do increase over time although more zooarcheological data is crucial before making behavioral inferences. Overall, this paper illustrates the potential of broad scale comparative faunal analyses to provide additional insights into processes of human behavioral evolution and the mechanisms underlying patterns of technological, chronological and contextual change.

Keywords: Middle Pleistocene | Africa | Acheulean | Middle Stone Age | Zooarcheology | Generalized linear modeling

Aktuell

CECH 2019

Erin A. Cech & Mary Blair-Loy, *The changing career trajectories of new parents in STEM. PNAS* **116** (2019), 4182–4187.

[pnas116-04182-Supplement.pdf](#)

The gender imbalance in science, technology, engineering, and math (STEM) fields has remained constant for decades and increases the farther up the STEM career pipeline one looks. Why does the underrepresentation of women endure? This study investigated the role of parenthood as a mechanism of gender-differentiated attrition from STEM employment. Using a nationally representative 8-year longitudinal sample of US STEM professionals, we examined the career trajectories of new parents after the birth or adoption of their first child. We found substantial attrition of new mothers: 43% of women leave full-time STEM employment after their first child. New mothers are more likely than new fathers to leave STEM, to switch to part-time work, and to exit the labor force. These gender differences hold irrespective of variation by discipline, race, and other demographic factors. However, parenthood is not just a “mother’s problem”; 23% of new fathers also leave STEM after their first child. Suggesting the difficulty of combining STEM work with caregiving responsibilities generally, new parents are more likely

to leave full-time STEM jobs than otherwise similar childless peers and even new parents who remain employed full time are more likely than their childless peers to exit STEM for work elsewhere. These results have implications for policymakers and STEM workforce scholars; whereas parenthood is an important mechanism of women's attrition, both women and men leave at surprisingly high rates after having children. Given that most people become parents during their working lives, STEM fields must do more to retain professionals with children.

Keywords: gender in STEM | STEM workforce | work–family balance | science policy | sociology

Significance: Why are women still underrepresented in science, technology, engineering, and math (STEM) jobs? Social processes beyond individual preferences may shape the STEM employment trajectories of new mothers and new fathers differently. Using representative US longitudinal survey data, we followed full-time STEM professionals after the birth or adoption of their first child. We found substantial attrition of new parents; nearly one-half of new mothers and nearly one-quarter of new fathers leave full-time STEM employment after having children. Thus, parenthood is an important driver of gender imbalance in STEM employment, and both mothers and fathers appear to encounter difficulties reconciling caregiving with STEM careers. These findings have implications for the vitality of the US science and engineering workforce.

GASTALDO 2019

Robert A. Gastaldo, *Plants escaped an ancient mass extinction*. [nature 567 \(2019\), 38–39](#).

A global biodiversity crash 251.9 million years ago has revealed how ecosystems respond to extreme perturbation. The finding that terrestrial ecosystems were less affected than marine ones is unexpected.

Fielding and colleagues' finding that the extinction of *Glossopteris* occurred about 370,000 years before the marine extinction event, and was coincident with the onset of massive volcanic activity, should now lead to investigations elsewhere in the Permian record to determine whether the loss of other wetland plants acts as a 'canary in the coal mine'. Fielding and colleagues find no evidence of an aridification trend in their region that would suggest that a hot terrestrial landscape promoted a mass extinction of plants during the time of the end-Permian crisis.

In contrast to prevailing wisdom, Nowak and colleagues demonstrate that land plants did not experience widespread extinction during Earth's most severe biological crisis. Their conclusion is similar to that drawn for terrestrial vertebrates. This leaves the relationship between the end-Permian marine mass extinction and the effect on land at the time enigmatic for now, and still up in the air for further investigation.

Anthropologie

BEAUDET 2019

Amélie Beaudet et al., *The bony labyrinth of StW 573 ("Little Foot")*, *Implications for early hominin evolution and paleobiology*. [Journal of Human Evolution 127 \(2019\), 67–80](#).

Amélie Beaudet, Ronald J. Clarke, Laurent Bruxelles, Kristian J. Carlson, Robin Crompton, Frikkie de Beer, Jelle Dhaene, Jason L. Heaton, Kudakwashe Jakata, Tea Jashashvili, Kathleen Kuman, Juliet McClymont, Travis R. Pickering & Dominic Stratford

Because of its exceptional degree of preservation and its geological age of ≈ 3.67 Ma, StW 573 makes an invaluable contribution to our understanding of early hominin evolution and paleobiology. The morphology of the bony labyrinth has the potential to provide information about extinct primate taxonomic diversity, phylogenetic relationships and locomotor behaviour. In this context, we virtually reconstruct and comparatively assess the bony labyrinth morphology in StW 573. As comparative material, we investigate 17 southern African hominin specimens from Sterkfontein, Swartkrans and Makapansgat (plus published data from two specimens from Kromdraai B), attributed to Australopithecus, early Homo or Paranthropus, as well as 10 extant human and 10 extant chimpanzee specimens. We apply a landmark-based geometric morphometric method for quantitatively assessing labyrinthine morphology. Morphology of the inner ear in StW 573 most closely resembles that of another Australopithecus individual from Sterkfontein, StW 578, recovered from the Jacovec Cavern. Within the limits of our sample, we observe a certain degree of morphological variation in the Australopithecus assemblage of Sterkfontein Member 4. Cochlear morphology in StW 573 is similar to that of other Australopithecus as well as to Paranthropus specimens included in this study, but it is substantially different from early Homo. Interestingly, the configuration of semicircular canals in Paranthropus specimens from Swartkrans differs from other fossil hominins, including StW 573. Given the role of the cochlea in the sensory-driven interactions with the surrounding environment, our results offer new perspectives for interpreting early hominin behaviour and ecology. Finally, our study provides additional evidence for discussing the phylogenetic polarity of labyrinthine traits in southern African hominins.

Keywords: Inner ear | Semicircular canals | Cochlea | Australopithecus | Sterkfontein

CLARKE 2019

Ronald J. Clarke, *Excavation, reconstruction and taphonomy of the StW 573 Australopithecus prometheus skeleton from Sterkfontein Caves, South Africa*. *Journal of Human Evolution* **127** (2019), 41–53.

The lengthy in situ excavation of the StW 573 individual, followed by many years of cleaning and reconstruction, has resulted in a nearly complete skeleton that provides a wealth of information on the morphology of one of our earliest ancestral relatives assigned to Australopithecus prometheus (Clarke, 2012, 2013; Clarke and Kuman, submitted), and explored further in other contributions to this special issue (Beaudet et al., 2019a,b; Heaton et al. submitted). For the first time, we have a complete skeleton and skull of one individual, identified to species, against which isolated and partial remains from Sterkfontein and Makapansgat can be compared and contrasted. A significant revelation from this skeleton is the fact that the legs are considerably longer than the arms (Fig. 13; see Heaton et al., submitted). Clues provided by the condition of the skeleton and by the breakage and calcification patterns indicate that it was a mummified body that had fallen down a shaft into the cavern during dry conditions and was subsequently affected by a series of other events (Bruxelles et al., submitted).

Keywords: Sterkfontein Australopithecus prometheus Excavation Fossil reconstruction Taphonom

DELOISON 2004

Yvette Deloison, *Die Urgeschichte eines Fußgängers, Studien über die Ursprünge der menschlichen Bipedie*. (Remscheid 2018). Original: Préhistoire du piéton.

THOMPSON 2019

Jessica C. Thompson, Susana Carvalho, Curtis W. Marean & Zeresenay Alemseged, *Origins of the Human Predatory Pattern, The Transition to Large-Animal Exploitation by Early Hominins*. [Current Anthropology 60 \(2019\), 1–23](#).

[CurrAnth60-001-Supplement.pdf](#)

Comments by: David R. Braun, Michael Pante, John J. Shea, Elisabetta Visalberghi, Lars Werdelin & Richard Wrangham

The habitual consumption of large-animal resources (e.g., similar sized or larger than the consumer) separates human and nonhuman primate behavior. Flaked stone tool use, another important hominin behavior, is often portrayed as being functionally related to this by the necessity of a sharp edge for cutting animal tissue. However, most research on both issues emphasizes sites that postdate ca. 2.0 million years ago. This paper critically examines the theoretical significance of the earlier origins of these two behaviors, their proposed interrelationship, and the nature of the empirical record. We argue that concepts of meat-eating and tool use are too loosely defined: outside-bone nutrients (e.g., meat) and inside-bone nutrients (e.g., marrow and brains) have different macronutrient characteristics (protein vs. fat), mechanical requirements for access (cutting vs. percussion), search, handling and competitive costs, encounter rates, and net returns. Thus, they would have demanded distinct technological and behavioral solutions. We propose that the regular exploitation of large-animal resources—the “human predatory pattern”—began with an emphasis on percussionbased scavenging of inside-bone nutrients, independent of the emergence of flaked stone tool use. This leads to a series of empirical test implications that differ from previous “meat-eating” origins scenarios.

Bibel

NA’AMAN 2017

Nadav Na’aman, *Rediscovering a Lost North Israelite Conquest Story*. In: ODED LIPSCHITS, YUVAL GADOT & MATTHEW J. ADAMS (Hrsg.), *Rethinking Israel, Studies in the History and Archaeology of Ancient Israel in Honor of Israel Finkelstein*. ([Winona Lake 2017](#)), 287–302.

Scholars have long emphasized that isolated traditions that do not conform to the national narrative might contain old stories excluded from the biblical canon and that elucidating these traditions might enrich our knowledge of the history, religion, and culture of the ancient Israelite society. I suggest that the episode in Gen 48:22 should be viewed in this light and reflects a lost conquest and allotment tradition, remains of which might be uncovered in various parts of the biblical text.

In my discussion, I noted several accounts that might have come from a lost North Israelite oral or written conquest story. Among these putative old accounts are: (a) the victory of the Israelites over a local powerful king, most probably the King of Shechem, near Bezek, a site located on the way from the Jordan Valley to the Manasseh hill country; (b) the conquest of Bethel by stratagem; (c) the battle at the Waters of Merom against the King of Hazor and the conquest and destruction of his city; and (d) the account of Joshua allotting the vast territory of Ephraim and Manasseh to the Josephites. I further suggested that Joshua himself might have been the champion of the North Israelite conquest story who led

the campaign and divided the conquered land among the Israelite tribes. If this (admittedly speculated) reconstruction is true, it indicates that the author of the conquest stories in the Book of Joshua “borrowed” some important elements of his work from the Israelite conquest story and imbedded them into his literary-ideological composition. In his work, he deliberately delineated Joshua and his army’s line of conquest along the northern border of the Kingdom of Judah, leaving Bethel, a city that the Josephites conquered according to the North Israelite story, outside the conquered territory.

NA’AMAN 2017

Nadav Na’aman, *Memories of Monarchical Israel in the Narratives of David’s Wars with Israel’s Neighbours*. [Hebrew Bible and Ancient Israel](#) **6** (2017), 308–328.

The article examines the literary relations between the accounts of David’s war with Israel’s neighbours (2 Sam 8:1–14) and his war with the Ammonites and Arameans (2 Sam 10:1–11:1a; 12:26–31). I suggest that the former was written later than the pre-Deuteronomistic story cycles of David and Solomon, and that it rests heavily on these works. I further posit that due to the long process of oral transmission of the history of David’s rise, this account includes memories of different periods, some of which might reflect the time of Jeroboam II.

Keywords: David | Joab | Ammonites | Arameans | Rabbah | Damascus | oral transmission

Datierung

DINNIS 2019

Rob Dinnis et al., *New data for the Early Upper Paleolithic of Kostenki (Russia)*. [Journal of Human Evolution](#) **127** (2019), 21–40.

[JHumEvo127-0021-Supplement1.pdf](#), [JHumEvo127-0021-Supplement2.zip](#)

Rob Dinnis, Alexander Bessudnov, Natasha Reynolds, Thibaut Devière, Abi Pate, Mikhail Sablin, Andrei Sinitsyn & Thomas Higham

Several questions remain regarding the timing and nature of the Neanderthal-anatomically modern human (AMH) transition in Europe. The situation in Eastern Europe is generally less clear due to the relatively few sites and a dearth of reliable radiocarbon dates. Claims have been made for both notably early AMH and notably late Neanderthal presence, as well as for early AMH (Aurignacian) dispersal into the region from Central/Western Europe. The Kostenki-Borshchevo complex (European Russia) of Early Upper Paleolithic (EUP) sites offers high-quality data to address these questions. Here we revise the chronology and cultural status of the key sites of Kostenki 17 and Kostenki 14. The Kostenki 17/II lithic assemblage shares important features with Proto-Aurignacian material, strengthening an association with AMHs. New radiocarbon dates for Kostenki 17/II of $\approx 41\text{--}40$ ka cal BP agree with new dates for the recently excavated Kostenki 14/IVw, which shows some similarities to Kostenki 17/II. Dates of ≥ 41 ka cal BP from other Kostenki sites cannot be linked to diagnostic archaeological material, and therefore cannot be argued to date AMH occupation. Kostenki 14’s Layer in Volcanic Ash assemblage, on the other hand, compares to Early Aurignacian material. New radiocarbon dates targeting diagnostic lithics date to 39–37 ka cal BP. Overall, Kostenki’s early EUP is in good agreement with the archaeological record further west. Our results are therefore consistent with models predicting inter-regional penecontemporaneity of diagnostic EUP assemblages. Most importantly, our work Highlights ongoing challenges for reliably radiocarbon dating the period.

Dates for Kostenki 14 agreed with the samples' chronostratigraphic positions, but standard pre-treatment methods consistently produced incorrect ages for Kostenki 17/II. Extraction of hydroxyproline from bone collagen using preparative high-performance liquid chromatography, however, yielded results consistent with the samples' chronostratigraphic position and with the layer's archaeological contents. This suggests that for some sites compound-specific techniques are required to build reliable radiocarbon chronologies.

Keywords: Early Upper Paleolithic | Anatomically modern humans | Radiocarbon dating | Kostenki | Eastern Europe | Bladelet technology

Isotope Klima Methoden

SIME 2019

Louise C. Sime, Peter O. Hopcroft & Rachael H. Rhodes, *Impact of abrupt sea ice loss on Greenland water isotopes during the last glacial period*. *PNAS* **116** (2019), 4099–4104.

[pnas116-04099-Supplement.pdf](#)

Greenland ice cores provide excellent evidence of past abrupt climate changes. However, there is no universally accepted theory of how and why these Dansgaard–Oeschger (DO) events occur. Several mechanisms have been proposed to explain DO events, including sea ice, ice shelf buildup, ice sheets, atmospheric circulation, and meltwater changes. DO event temperature reconstructions depend on the stable water isotope (d18O) and nitrogen isotope measurements from Greenland ice cores: interpretation of these measurements holds the key to understanding the nature of DO events. Here, we demonstrate the primary importance of sea ice as a control on Greenland ice core d18O: 95 % of the variability in d18O in southern Greenland is explained by DO event sea ice changes. Our suite of DO events, simulated using a general circulation model, accurately captures the amplitude of d18O enrichment during the abrupt DO event onsets. Simulated geographical variability is broadly consistent with available ice core evidence. We find an hitherto unknown sensitivity of the d18O paleothermometer to the magnitude of DO event temperature increase: the change in d18O per Kelvin temperature increase reduces with DO event amplitude. We show that this effect is controlled by precipitation seasonality.

Keywords: abrupt warmings | climate change | Arctic | sea ice | paleoclimate

Significance: The Dansgaard–Oeschger events contained in Greenland ice cores constitute the archetypal record of abrupt climate change. An accurate understanding of these events hinges on interpretation of Greenland records of oxygen and nitrogen isotopes. We present here the important results from a suite of modeled Dansgaard–Oeschger events. These simulations show that the change in oxygen isotope per degree of warming becomes smaller during larger events. Abrupt reductions in sea ice also emerge as a strong control on ice core oxygen isotopes because of the influence on both the moisture source and the regional temperature increase. This work confirms the significance of sea ice for past abrupt warming events.

Judentum

STOFFELS 2012

Patrick Stoffels, *Die Wiederverwendung jüdischer Grabsteine im spätmittelalterlichen Reich*. Arye-Maimon-Institut für Geschichte der Juden 5 (Trier 2012).

Klima

BEENSTOCK 2015

Michael Beenstock, Daniel Felsenstein, Eyal Frank & Yaniv Reingewertz, *Tide gauge location and the measurement of global sea level rise. Environmental and Ecological Statistics* **22** (2015), 179–206.

The location of tide gauges is not random. If their locations are positively (negatively) correlated with sea level rise (SLR), estimates of global SLR will be biased upwards (downwards). Using individual tide gauges obtained from the Permanent Service for Mean Sea Level during 1807–2010, we show that tide gauge locations in 2000 were independent of SLR as measured by satellite altimetry. Therefore these tide gauges constitute a quasi-random sample, and inferences about global SLR obtained from them are unbiased. Using recently developed methods for non-stationary time series, we find that sea levels rose in 7% of tide gauge locations and fell in 4%. The global mean increase is 0.39–1.03 mm/year. However, the mean increase for locations where sea levels are rising is 3.55–4.42 mm/year. These findings are much lower than estimates of global sea level (2.2 mm/year) reported in the literature and adopted by IPCC (2014), and which make widespread use of imputed data for locations which do not have tide gauges. We show that although tide gauge locations in 2000 are uncorrelated with SLR, the global diffusion of tide gauges during the 20th century was negatively correlated with SLR. This phenomenon induces positive imputation bias in estimates of global mean sea levels because tide gauges installed in the 19th century happened to be in locations where sea levels happened to be rising.

Keywords: Non-stationary time series | Sea level rise | Selection bias | Tide gauge location

Kultur

HERZLINGER 2019

Gadi Herzlinger & Naama Goren-Inbar, *Do a few tools necessarily mean a few people? A technomorphological approach to the question of group size at Gesher Benot Ya'aqov, Israel. Journal of Human Evolution* **128** (2019), 45–58.

JHumEvo128-0045-Supplement.pdf

The question of Paleolithic group size has been addressed by scholars in many disciplines applying different methods. In our study we apply a novel analytical approach in an attempt to assess the group size of hominins that occupied the Acheulian site of Gesher Benot Ya'aqov, Israel (GBY). Within this framework, we subjected the handaxe assemblages from several archaeological horizons at the site to a morpho-technological analysis. The analysis combined high-resolution three-dimensional geometric morphometric analysis with typo-technological attribute analysis to assess the inter- and intraassemblage morpho-technological variability. The analysis was also applied to an experimental handaxe assemblage produced by an expert knapper. The results of the analysis show high morphological homogeneity coupled with high technological variability in each of the archaeological assemblages. This pattern is highly indicative of the work of expert knappers, as is also suggested by the comparison between the archaeological and experimental assemblages. The high density of archaeological remains in some of the GBY occupations and their pristine taphonomic condition provide additional support for the involvement of large groups of hominins, although some horizons are far poorer in archaeological remains and hence do not allow such an interpretation.

Nevertheless, the fact that in all assemblages the handaxes show the same technomorphological pattern indicates that they were all produced by expert knappers. As shown by numerous models and ethnographic data, the presence of experts can be viewed as an indication of large and socially complex societies. Thus, although some of the GBY occupations were not formed by large groups, the smaller groups whose activities are recorded were very likely to be part of larger, socially complex cultural groups. This variability in occupational intensity is interpreted as representing an aggregation-dispersal mechanism, similar to those documented in many huntergatherer societies.

Keywords: Handaxe | Acheulian | Geometric morphometric analyses | Technology | Expertise | Social complexity

MAHER 2019

Lisa A. Maher & Margaret Conkey, *Homes for Hunters? Exploring the Concept of Home at Hunter-Gatherer Sites in Upper Paleolithic Europe and Epipaleolithic Southwest Asia*. [Current Anthropology 60 \(2019\), 91–137](#).

Comments by: Françoise Audouze, Anna Belfer-Cohen and A. Nigel Goring-Morris, Brian Boyd, Bill Finlayson, Michelle C. Langley, Dani Nadel, Deborah I. Olszewski, Tobias Richter, Silvia Tomášková, Graeme Warren, Trevor Watkins

In both Southwest Asia and Europe, only a handful of known Upper Paleolithic and Epipaleolithic sites attest to aggregation or gatherings of hunter-gatherer groups, sometimes including evidence of hut structures and highly structured use of space. Interpretation of these structures ranges greatly, from mere ephemeral shelters to places “built” into a landscape with meanings beyond refuge from the elements. One might argue that this ambiguity stems from a largely functional interpretation of shelters that is embodied in the very terminology we use to describe them in comparison to the homes of later farming communities: mobile hunter-gatherers build and occupy huts that can form campsites, whereas sedentary farmers occupy houses or homes that form communities. Here we examine some of the evidence for Upper Paleolithic and Epipaleolithic structures in Europe and Southwest Asia, offering insights into their complex “functions” and examining perceptions of space among hunter-gatherer communities. We do this through examination of two contemporary, yet geographically and culturally distinct, examples: Upper Paleolithic (especially Magdalenian) evidence in Western Europe and the Epipaleolithic record (especially Early and Middle phases) in Southwest Asia. A comparison of recent evidence for hut structures from these regions suggests several similarities in the nature of these structures, their association with activities related to hunter-gatherer aggregation, and their being “homes” imbued with quotidian and symbolic meaning.

MALINSKY-BULLER 2019

Ariel Malinsky-Buller & Erella Hovers, *One size does not fit all, Group size and the late middle Pleistocene prehistoric archive*. [Journal of Human Evolution 127 \(2019\), 118–132](#).

The role of demography is often suggested to be a key factor in both biological and cultural evolution. Recent research has shown that the linkage between population size and cultural evolution is not straightforward and emerges from the interplay of many demographic, economic, social and ecological variables. Formal modelling has yielded interesting insights into the complex relationship between population structure, intergroup connectedness, and magnitude and extent of population extinctions. Such studies have highlighted the importance of effective (as

opposed to census) population size in transmission processes. At the same time, it remained unclear how such insights can be applied to material culture phenomena in the prehistoric record, especially for deeper prehistory. In this paper we approach the issue of population sizes during the time of the Lower to Middle Paleolithic transition through the proxy of regional trajectories of lithic technological change, identified in the archaeological records from Africa, the Levant, Southwestern and Northwestern Europe. Our discussion of the results takes into consideration the constraints inherent to the archaeological record of deep time – e.g., preservation bias, time-averaging and the incomplete nature of the archaeological record – and of extrapolation from discrete archaeological case studies to an evolutionary time scale. We suggest that technological trajectories of change over this transitional period reflect the robustness of transmission networks. Our results show differences in the pattern and rate of cultural transmission in these regions, from which we infer that information networks, and their underlying effective population sizes, also differed.

Keywords: Paleolithic transitions | Demography | Cultural transmission | Levant | Western Europe | Out of Africa

Mathematik

KNAPPETT 2008

Carl Knappett, Tim Evans & Ray Rivers, *Modelling maritime interaction in the Aegean Bronze Age*. [Antiquity](#) **82** (2008), 1009–1024.

The authors raise spatial analysis to a new level of sophistication – and insight – in proposing a mathematical model of ‘imperfect optimisation’ to describe maritime networks. This model encodes, metaphorically, the notion of gravitational attraction between objects in space. The space studied here is the southern Aegean in the Middle Bronze Age, and the objects are the 34 main sites we know about. The ‘gravitation’ in this case is a balance of social forces, expressed by networks with settlements of particular sizes and links of particular strengths. The model can be tweaked by giving different relative importance to the cultivation of local resources or to trade, and to show what happens when a member of the network suddenly disappears.

Keywords: Greece | Aegean | Bronze Age | maritime networks | spatial analysis

SAFADI 2019

Crystal Safadi & Fraser Sturt, *The warped sea of sailing, Maritime topographies of space and time for the Bronze Age eastern Mediterranean*. [Journal of Archaeological Science](#) **103** (2019), 1–15.

Time has consistently been regarded as the missing dimension from our renderings of space, having a significant impact on how we interpret and represent past interaction. Nowhere is this more keenly felt than in discussion of maritime mobility. This paper outlines an innovative approach to mapping maritime spaces by taking into account the performance of Bronze Age sailing ships in different weather conditions and the subsequent time of sailing journeys. The use of cartograms is demonstrated to be invaluable for reconceptualisation of maritime space and rethinking maritime connectivity in the past. This marks a step-change in approach, which has implications for regions beyond the case study area (eastern Mediterranean). The results presented in this paper foreground meaningful differences in maritime connectivity between Egypt and the Levant during the earlier Bronze Age than are easily realised through traditional static representations. This demonstrates the significance of developing alternative representations of space/time for archaeology.

Methoden

MCFADDEN 2019

Clare McFadden & Marc F. Oxenham, *The Paleodemographic Measure of Maternal Mortality and a Multifaceted Approach to Maternal Health*. [Current Anthropology](#) **60** (2019), 141–146.

We have provided a new paleodemographic measure of maternal mortality derived from United Nations (2017) data and based on the relationship between sex-differential mortality in the age group 20–24 years ($r=0.894$; 95 % CI, 0.837–0.932). We determined that a greater age range, specifically 20–34 years, also correlated with maternal mortality and therefore the use of the dF_{20-24}/dM_{20-24} ratio effectively reduces the impact of error associated with age-at-death estimations. The estimated maternal mortality rate can be compared with those of other past populations to determine inter- and intrapopulation differences. In the context of broader bioarchaeological information, such as indicators of care, nutritional deficiency, disease, and socioeconomic status, the maternal mortality rate may offer significant insights into the causes of maternal mortality, sophistication of maternal care, and female experience of pregnancy and childbirth in past populations.

Methoden Klima

MCKITRICK 2018

Ross McKittrick & John Christy, *A Test of the Tropical 200- to 300-hPa Warming Rate in Climate Models*. [Earth and Space Science](#) **5** (2018), 529–536.

[EaSpaSci05-0529-Supplement.pdf](#)

Key Points:

- Climate models embed countless minor hypotheses and at least one major, testable hypothesis related to equilibrium sensitivity
- We outline four criteria that identify a testable prediction of the major hypothesis, namely, tropical 200- to 300-hPa warming
- CMIP5 models show a large, significant, and uniform warm bias in that layer of sufficient magnitude to reject the major hypothesis

Overall climate sensitivity to CO₂ doubling in a general circulation model results from a complex system of parameterizations in combination with the underlying model structure. We refer to this as the model's major hypothesis, and we assume it to be testable. We explain four criteria that a valid test should meet: measurability, specificity, independence, and uniqueness. We argue that temperature change in the tropical 200- to 300-hPa layer meets these criteria. Comparing modeled to observed trends over the past 60 years using a persistence-robust variance estimator shows that all models warm more rapidly than observations and in the majority of individual cases the discrepancy is statistically significant. We argue that this provides informative evidence against the major hypothesis in most current climate models.

Religion

HODGSON 2019

Derek Hodgson, *Understanding the Origins of Paleoart, The Neuro-visual Resonance Theory and Brain Functioning*. [PaleoAnthropology 2006 \(2019\), 54–67](#).

Mark making on a range of objects and the manufacture of artifacts seem to have an ancient derivation, predating the representational depiction of the Upper Paleolithic by a considerable period. In an attempt to provide a coherent explanation for the appearance and longevity of these items, I submit a theory based upon how the visual cortex and visuo-spatial areas of the brain function in relation to the emergence of symmetry in lithic technologies. This theory endeavors to show how the preference of hominins for natural occurring objects, such as crystals and fossils, and the ability to make sculptured items, can potentially be accommodated under the aegis of one all-embracing explanation. It shows how various parts of the visual brain have influenced the preference for certain marks and shapes in that different regions of the visual pathways are shown to resonate or respond disproportionately according to the nature of the stimulus. These preferences are deemed to have become subject to material realization thanks to the interfacing of visual and visuo-motor pathways that had previously functioned as relatively separate systems.

It can be concluded that the early areas of the visual cortex played a facilitating role in the production of early mark making through several pathways. These pathways will have led to an undefined sense of arousal leading to a raised state of awareness that would have intrigued early humans. Constrained by the way the early visual cortex is structured to process visual information, early mark making would have thus simulated this process by resonating with the mechanisms involved at each stage. In this way, a graphic vocabulary of marks would have arisen, beginning with simple repetitive lines, leading to more complex forms and patterns, as found in the archaeological record. Although not symbolic in the more exacting sense, repetitive marks would have occasioned “meaning” for their authors because they led to a sense of empathy that came to imply order and stability in the face of change. A previously passive appreciation of repetition and symmetry, typical of marks found in relation to some naturally occurring objects (e.g., fossils, crystals, etc.), will have been relected in a subsequent feeling for the enhanced symmetry of tools as a function of the “what/how” pathway of the brain. An evolutionary newer channel served as a link between the “what” pathway and the visuo-spatial channel that seems to be a function of an enlarged inferior parietal cortex and which, as well as leading to more inely shaped tools, also led to the first intentionally made geometric patterns and sculptured objects. The earliest sculptural artifacts occasioned an elementary form of iconicity, which grew out of a “passive” appreciation of the fortuitous resemblance contained in natural objects, that was facilitated by a growing awareness of symmetry in tools as well as the ability to produce repetitive marks.

Story or Book

FINKBEINER 2019

Ann Finkbeiner, *Einstein’s wife, A life in shadows*. [nature 567 \(2019\), 28–29](#).

Ann Finkbeiner reviews a study weighing up whether Mileva Marić contributed to the epochal theories.

Einstein's Wife: The Real Story of Mileva Einstein-Marić. Allen Esterson & David C. Cassidy, with Ruth Lewin Sime. MIT Press (2019)

Both studied physics, taking some of the same courses and, in many of those, getting comparable course results. Here, she and Einstein found they were equally unbrilliant at maths. In physics, their performances diverged, with her examination scores generally good, and his exceptional. Over the next few years, Mariæ's career trajectory headed south: she did poorly in her exams, was denied a diploma, became pregnant while unmarried and in 1902 gave birth to a girl who either died or was adopted. She and Einstein finally married in 1903. Settling into the traditional housewifely role, she had another baby in 1904. As far as her science went, that was that. Then came Einstein's miracle year: his 1905 papers on atomic, quantum and relativity theory changed the agenda for physics. In 1919, the couple divorced after 16 years of marriage, having had a third child.

Later, linguist Senta Troemel-Ploetz and Evan Harris Walker, a physicist and parapsychologist, interpreted letters that the pair wrote to each other and to others (along with interviews with their son Hans-Albert, in which he contradicted himself) as showing that Mariæ's ideas were central to Einstein's science. Over the years, this story has been repeated in a cottage industry of publications, most referring to the same few sources.

Esterson presents the counter-argument. He tracks down and analyses, exhaustively, each source's sources. Esterson's narrative is detailed, but also repetitive and confusing, partly because he examines each reuse of particular sources.