

References

Afrika

MILLER 2014

Jennifer Midori Miller & Pamela Rae Willoughby, *Radiometrically dated ostrich eggshell beads from the Middle and Later Stone Age of Magubike Rockshelter, southern Tanzania*. [Journal of Human Evolution 74 \(2014\), 118–122](#).

The radiocarbon dated beads from Magubike show that the OES beadmaking tradition is not exclusive to the LSA, but appears to have begun at least 50,000 years ago in the MSA. Although OES beads are not the earliest known decorative artifacts, they represent an important augmentation to social interactions. Social innovations, in conjunction with technological developments, reflect a cognitive elaboration that eventually permitted the expansion of modern human populations out of Africa (McBrearty and Brooks, 2000; Henshilwood and Marean, 2003).

SKOWRONEK 2023

Tobias B. Skowronek, Christopher R. DeCorse & Rolf Denk et al., *German brass for Benin Bronzes, Geochemical analysis insights into the early Atlantic trade*. [PLoS ONE 18 \(2023\), e283415](#). [DOI:10.1371/journal.pone.0283415](#).

[pone18-e0283415-Supplement.xlsx](#)

Utilizing geochemical analysis, this study identifies the sources of European brass used in the casting of the renowned Benin Bronzes, produced by the Edo people of Nigeria. It is commonly believed that distinctive brass rings known as “manillas”, used as currency in the European trade in West Africa, also served as a metal source for the making of the Bronzes. However, prior to the current study, no research had conclusively connected the Benin artworks and the European manillas. For this research, manillas from shipwrecks in African, American and European waters dating between the 16th and 19th Century were analysed using ICP-MS analysis. Comparing trace elements and lead isotope ratios of manillas and Benin Bronzes identifies Germany as the principal source of the manillas used in the West African trade between the 15th and 18th centuries before British industries took over the brass trade in the late 18th century.

Tobias B. Skowronek, Christopher R. DeCorse, Rolf Denk, Stefan D. Birr, Sean Kingsley, Gregory D. Cook, Ana María Benito Dominguez, Brandon Clifford, Andrew Barker, José Suárez Otero, Vicente Caramés Moreira, Michael Bode, Moritz Jansen & Daniel Scholes

Anthropologie

KERNER 2023

Gaspard Kerner, Etienne Patin, Guillaume Laval & Lluís Quintana-Murci et al., *Genetic adaptation to pathogens and increased risk of inflammatory disorders in post-Neolithic Europe*. [Cell Genomics 3 \(2023\), 100248, 1–25](#).

CellGen03-a100248-Supplement.zip

Ancient genomics can directly detect human genetic adaptation to environmental cues. However, it remains unclear how pathogens have exerted selective pressures on human genome diversity across different epochs and affected present-day inflammatory disease risk. Here, we use an ancestry-aware approximate Bayesian computation framework to estimate the nature, strength, and time of onset of selection acting on 2,879 ancient and modern European genomes from the last 10,000 years. We found that the bulk of genetic adaptation occurred after the start of the Bronze Age, <4,500 years ago, and was enriched in genes relating to host-pathogen interactions. Furthermore, we detected directional selection acting on specific leukocytic lineages and experimentally demonstrated that the strongest negatively selected candidate variant in immunity genes, lipopolysaccharide-binding protein (LBP) D283G, is hypomorphic. Finally, our analyses suggest that the risk of inflammatory disorders has increased in post-Neolithic Europeans, possibly because of antagonistic pleiotropy following genetic adaptation to pathogens.

Highlights:

- Ancient genomics studies allow detection of the extent of natural selection over time
- Genetic adaptation in Europe has mainly occurred after the start of the Bronze Age
- Immunity genes have been strongly affected by both positive and negative selection
- Resistance to infection has increased inflammatory disease risk in recent millennia

In brief: Kerner et al. analyze ancient human genomes to reconstruct the history of host-pathogen interactions over the last 10,000 years. They found that genetic adaptation has occurred principally after the Bronze Age and show that the risk of inflammatory disorders has increased in post-Neolithic Europeans, following genetic adaptation to infectious diseases.

Gaspard Kerner, Anna-Lena Neehus, Quentin Philippot, Jonathan Bohlen, Darawan Rinchai, Nacim Kerrouche, Anne Puel, Shen-Ying Zhang, Stéphanie Boisson-Dupuis, Laurent Abel, Jean-Laurent Casanova, Etienne Patin, Guillaume Laval & Lluís Quintana-Murci

MACLATCHY 2023

Laura M. MacLatchy et al., *The evolution of hominoid locomotor versatility, Evidence from Moroto, a 21 Ma site in Uganda.* [science 380 \(2023\), 172.](#)

s380-0172-Supplement.pdf

Living hominoids are distinguished by upright torsos and versatile locomotion. It is hypothesized that these features evolved for feeding on fruit from terminal branches in forests. To investigate the evolutionary context of hominoid adaptive origins, we analyzed multiple paleoenvironmental proxies in conjunction with hominoid fossils from the Moroto II site in Uganda. The data indicate seasonally dry woodlands with the earliest evidence of abundant C4 grasses in Africa based on a confirmed age of 21 million years ago (Ma). We demonstrate that the leaf-eating hominoid *Morotopithecus* consumed water-stressed vegetation, and postcrania from the site indicate ape-like locomotor adaptations. These findings suggest that the origin of hominoid locomotor versatility is associated with foraging on leaves in heterogeneous, open woodlands rather than forests.

Laura M. MacLatchy, Susanne M. Cote, Alan L. Deino, Robert M. Kityo, Amon A. T. Mugume, James B. Rossie, William J. Sanders, Miranda N. Cosman, Steven

G. Driese, David L. Fox, April J. Freeman, Rutger J. W. Jansma, Kirsten E. H. Jenkins, Rahab N. Kinyanjui, William E. Lukens, Kieran P. McNulty, Alice Novello, Daniel J. Peppe, Caroline A. E. Strömberg, Kevin T. Uno, Alisa J. Winkler & John D. Kingston

Archäologie

COLLINS 2021

Paul Collins, *The Sumerians*. Lost civilizations (London 2021).

The Sumerians are widely believed to have created the world's earliest civilization on the fertile floodplains of southern Iraq from about 3500 to 2000 BC. They have been credited with the invention of nothing less than cities, writing and the wheel, and therefore hold an ancient mirror to our own urban, literate world. But is this picture correct? Paul Collins reveals how the idea of a Sumerian people was assembled from the archaeological and textual evidence uncovered in Iraq and Syria over the last 150 years. Reconstructed through the biases of those who unearthed them, the Sumerians were never simply lost and found, but reinvented a number of times, both in antiquity and in the more recent past.

Bibel

BEN-YOSEF 2023

Erez Ben-Yosef & Zachary Thomas, *Complexity Without Monumentality in Biblical Times*. [Journal of Archaeological Research \(2023\), preprint, 1–43. DOI:10.1007/s10814-023-09184-0.](#)

One of the most significant aspects of cultural variation that world archaeology has revealed is the many different forms of social complexity among ancient and more recent premodern societies. Although this exposes the shortcomings of older evolutionary approaches, Levantine and broader Near Eastern archaeology remains relatively inflexible and conservative in the perception of social complexity in the archaeological record. A necessary association between complexity and monumentality remains prevalent, whereby monumentality is understood as an important operative cog in the complexity machine. Conversely, complexity can only be read in the archaeological record where monumentality is present. This paper seeks to untie this necessary association by demonstrating that complexity without monumentality occurred in societies of the biblical period that were fully or partly nomadic and otherwise lacked a clear cultural conception of monumentality as central to the ideology of political authority and structure. This is done through the presentation of early Iron Age Edom and its implications for the understanding of the neighboring United Monarchy of ancient Israel.

Keywords: Social complexity | Architectural bias | Social evolution | United Monarchy of ancient Israel | Levantine Iron Age | Nomads

Biologie

RAVIV 2023

Limor Raviv, Sarah L. Jacobson, Joshua M. Plotnik, Jacob Bowman, Vincent Lynch & Antonio Benítez-Burraco, *Elephants as an animal model for self-domestication*. [PNAS 120 \(2023\), e2208607120.](#)

[pnas120-e2208607120-Supplement.pdf](#)

Humans are unique in their sophisticated culture and societal structures, their complex languages, and their extensive tool use. According to the human self-domestication hypothesis, this unique set of traits may be the result of an evolutionary process of self-induced domestication, in which humans evolved to be less aggressive and more cooperative. However, the only other species that has been argued to be self-domesticated besides humans so far is bonobos, resulting in a narrow scope for investigating this theory limited to the primate order. Here, we propose an animal model for studying self-domestication: the elephant. First, we support our hypothesis with an extensive cross-species comparison, which suggests that elephants indeed exhibit many of the features associated with self-domestication (e.g., reduced aggression, increased prosociality, extended juvenile period, increased playfulness, socially regulated cortisol levels, and complex vocal behavior). Next, we present genetic evidence to reinforce our proposal, showing that genes positively selected in elephants are enriched in pathways associated with domestication traits and include several candidate genes previously associated with domestication. We also discuss several explanations for what may have triggered a self-domestication process in the elephant lineage. Our findings support the idea that elephants, like humans and bonobos, may be self-domesticated. Since the most recent common ancestor of humans and elephants is likely the most recent common ancestor of all placental mammals, our findings have important implications for convergent evolution beyond the primate taxa, and constitute an important advance toward understanding how and why self-domestication shaped humans' unique cultural niche.

Keywords: elephants | self-domestication | evolution | prosociality | cross-species comparisons

Significance: Why did humans, and no other animal, develop the complement of complex cultures, languages, and tools? Answering this question is one of the most important endeavors of modern science, which can shed light not only on our distinctive cognitive and behavioral phenotype, but also on the evolutionary pressures that gave rise to it. A promising theory, the human self-domestication hypothesis, suggests that humans' uniqueness is the outcome of an evolutionary process of selection against aggression. While compelling, this theory is hard to test: Besides humans, only one other species (bonobos) has been argued to be self-domesticated. Our work suggests that elephants may also be self-domesticated, leading to exciting future research on the evolutionary similarities between humans and other species beyond the primate order.

Datierung

PRICE 2023

Michael Price, *Marking Time, Miyake events*. [science 380 \(2023\), 124–128](#).

Radiocarbon timestamps left in ancient tree rings by cosmic ray bombardments can date historical events with unprecedented precision.

Grabung

DE VAUX 1959

Roland de Vaux, *Archaeology and the Dead Sea Scrolls*. Schweich Lectures ([London 21973](#)).

Islam

BAUER 2018

Thomas Bauer, *Warum es kein islamisches Mittelalter gab, Das Erbe der Antike und der Orient.* (München 2020).

Dem Islam wird gerne vorgeworfen, er sei im Mittelalter steckengeblieben. Was aber, wenn es gar kein islamisches Mittelalter gab? Thomas Bauer zeigt an zahlreichen Beispielen, wie in der islamischen Welt die antike Zivilisation mit florierenden Städten und Wissenschaften weiterlebte, während im mittelalterlichen Europa nur noch Ruinen an eine untergegangene Kultur erinnerten. Ein kleines Meisterwerk, das konzis, anschaulich und mit der nötigen Portion Gnadenlosigkeit unser Bild von einem reformbedürftigen "mittelalterlichen" Islam widerlegt.

Judentum

MAGNESS 2006

Jodi Magness, *Qumran: the Site of the Dead Sea Scrolls, A review article.* *Revue de Qumrân* **22** (2006), 641–664.

To conclude, the papers in this volume are uneven in their scholarly value and contribution. In many cases statements that are presented as fact in one paper are contradicted with just as much conviction in another paper. Many readers will be left wondering whether there are any hard facts or data in archaeology. Sad to say, this volume reflects the current state of Qumran archaeology. Hopefully by understanding the background to these debates, readers will be able to evaluate for themselves the validity of the different claims and interpretations.

Klima

GUILLET 2023

Sébastien Guillet, Christophe Corona, Clive Oppenheimer & Markus Stoffel et al., *Lunar eclipses illuminate timing and climate impact of medieval volcanism.* *nature* **616** (2023), 90–95.

Explosive volcanism is a key contributor to climate variability on interannual to centennial timescales¹. Understanding the far-field societal impacts of eruption-forced climatic changes requires firm event chronologies and reliable estimates of both the burden and altitude (that is, tropospheric versus stratospheric) of volcanic sulfate aerosol^{2,3}. However, despite progress in ice-core dating, uncertainties remain in these key factors⁴. This particularly hinders investigation of the role of large, temporally clustered eruptions during the High Medieval Period (HMP, 1100–1300 ce), which have been implicated in the transition from the warm Medieval Climate Anomaly to the Little Ice Age⁵. Here we shed new light on explosive volcanism during the HMP, drawing on analysis of contemporary reports of total lunar eclipses, from which we derive a time series of stratospheric turbidity. By combining this new record with aerosol model simulations and tree-ring-based climate proxies, we refine the estimated dates of five notable eruptions and associate each with stratospheric aerosol veils. Five further eruptions, including one responsible for high sulfur deposition over Greenland circa 1182 ce, affected only the troposphere and had muted climatic consequences. Our findings offer support for further investigation of the decadal-scale to centennial-scale climate response to volcanic eruptions.

Sébastien Guillet, Christophe Corona, Clive Oppenheimer, Franck Lavigne, Myriam Khodri, Francis Ludlow, Michael Sigl, Matthew Toohey, Paul S. Atkins, Zhen Yang, Tomoko Muranaka, Nobuko Horikawa & Markus Stoffel

PEPPE 2023

Daniel J. Peppe et al., *Oldest evidence of abundant C4 grasses and habitat heterogeneity in eastern Africa*. [science](#) **380** (2023), 173–177. [s380-0173-Supplement.pdf](#)

The assembly of Africa’s iconic C4 grassland ecosystems is central to evolutionary interpretations of many mammal lineages, including hominins. C4 grasses are thought to have become ecologically dominant in Africa only after 10 million years ago (Ma). However, paleobotanical records older than 10 Ma are sparse, limiting assessment of the timing and nature of C4 biomass expansion. This study uses a multiproxy design to document vegetation structure from nine Early Miocene mammal site complexes across eastern Africa. Results demonstrate that between \approx 21 and 16 Ma, C4 grasses were locally abundant, contributing to heterogeneous habitats ranging from forests to wooded grasslands. These data push back the oldest evidence of C4 grass-dominated habitats in Africa—and globally—by more than 10 million years, calling for revised paleoecological interpretations of mammalian evolution.

Daniel J. Peppe, Susanne M. Cote, Alan L. Deino, David L. Fox, John D. Kingston, Rahab N. Kinyanjui, William E. Lukens, Laura M. MacLatchy, Alice Novello, Caroline A. E. Strömberg, Steven G. Driese, Nicole D. Garrett, Kayla R. Hillis, Bonnie F. Jacobs, Kirsten E. H. Jenkins, Robert M. Kityo, Thomas Lehmann, Fredrick K. Manthi, Emma N. Mbua, Lauren A. Michel, Ellen R. Miller, Amon A. T. Mugume, Samuel N. Muteti, Isaiah O. Nengo, Kennedy O. Oginga, Samuel R. Phelps, Pratigya Polissar, James B. Rossie, Nancy J. Stevens, Kevin T. Uno & Kieran P. McNulty

SEIM 2023

Andrea Seim, Eduardo Zorita & Anne Lawrence-Mathers, *The medieval Moon unveils volcanic secrets*. [nature](#) **616** (2023), 38–40.

Innovative use of medieval musings about the Moon has revealed that volcanic eruptions coincided with abrupt, global-scale cooling events. The approach is exciting from the perspective of climate scientists and historians alike.

The paper in brief

- Volcanic eruptions inject large volumes of sulfur dioxide into the atmosphere that are converted into aerosols in the stratosphere.
- These aerosols produce volcanic dust that can reduce incoming solar radiation, altering Earth’s surface temperatures, precipitation and atmospheric circulation.
- Identifying past volcanic eruptions can therefore help to clarify the timing and nature of climate events, but current methods produce conflicting Results.
- Guillet et al. report an approach that interprets medieval accounts of lunar eclipses to date volcanic eruptions that could have shaped a key climatic transition.

Kultur

GUERRA-DOCE 2023

E. Guerra-Doce, C. Rihuete-Herrada, R. Micó, R. Risch, V. Lull & H. M. Niemeyer, *Direct evidence of the use of multiple drugs in Bronze Age Menorca (Western Mediterranean) from human hair analysis*. [Scientific Reports](#) **13** (2023), 4752. DOI:10.1038/s41598-023-31064-2.

Human hair dated to Late Prehistory is exceedingly rare in the Western Mediterranean. Archaeological excavations in the Bronze Age burial and cult cave of Es Càrritx, in Menorca (Balearic Islands) provided some human hair strands involved in a singular funerary rite. This finding offered the opportunity to explore the possible use of drug plants by Late Bronze Age people. Here we show the results of the chemical analyses of a sample of such hair using Ultra-High-Performance Liquid Chromatography-High Resolution Mass Spectrometry (UHPLC-HRMS). The alkaloids ephedrine, atropine and scopolamine were detected, and their concentrations estimated. These results confirm the use of different alkaloid-bearing plants by local communities of this Western Mediterranean island by the beginning of the first millennium cal BCE.

Neolithikum

CAREY 2023

John Carey, *Unearthing the origins of agriculture*. [PNAS 120 \(2023\), e2304407120](#).

Archaeobiology is offering new insights into the long-debated roots and evolution of the practice that made large human settlements and our modern complex society possible—even if at a cost.

It's clear that people didn't just domesticate the specific wild plants that were most available; their choices reflected cultural preferences. What we've learned is that there is a huge social component, says Zeder. The current evidence suggests these regional differences in cooking technologies are rooted in the Pleistocene, way before plant domestication, says Liu.

DOUCHÉ 2023

Carolynne Douché & George Willcox, *Identification and exploitation of wild rye (*Secale* spp.) during the early Neolithic in the Middle Euphrates valley*. [Vegetation History and Archaeobotany \(2023\), preprint, 1–15. DOI:10.1007/s00334-023-00906-4](#).

Charred remains of wild rye from five sites in the Middle Euphrates region in Syria dated to the end of the Pleistocene and the beginning of the Holocene are examined. This period spans the transition from gathering to the beginnings of cultivation. Today wild rye cannot grow in the region because temperatures and aridity are too pronounced. Wild rye grains and wild two-grained einkorn are morphologically similar, which has led to difficulties in identification; in some cases rye may have been identified as two-grained einkorn or as *Triticum/Secale*. In this paper, with reference to modern specimens and re-examination of charred material from Dja'de el-Mughara, Jerf el-Ahmar and Mureybet, we examine the criteria for identification and revise the results for charred caryopses and wild spikelet bases. We then present these new results which show that at the early Neolithic sites of Jerf el-Ahmar, Mureybet, Dja'de el-Mughara and Tell 'Abr 3 wild rye frequencies are much higher than einkorn but wild barley is the dominant cereal. This is followed by discussions of how and why wild rye may have been exploited during the early Neolithic and why rye disappears from Euphrates sites with the advent of mixed farming.

Keywords: Northern Syria | Early Holocene | *Secale* | Rye | Plant exploitation

Physik

CLAPEYRON 1834

Émile Clapeyron, *Mémoire sur la puissance motrice de la chaleur.*
[Journal de l'École Polytechnique](#) **14** (1834), 153–190.