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References

Afrika

Madella 2014

Marco Madella, Juan José García-Granero, Welmoed A. Out, Philippa Ryan & Donatella Usai, *Microbotanical Evidence of Domestic Cereals in Africa 7000 Years Ago*. PLoS ONE **9** (2014), e110177. DOI:10.1371/journal.pone.0110177.

The study of plant exploitation and early use of cereals in Africa has seen over the years a great input from charred and desiccated macrobotanical remains. This paper presents the results of one of the few examples in Africa of microbotanical analyses. Three grave contexts of phytolith-rich deposits and the dental calculus of 20 individuals were analysed from two Neolithic cemeteries in North and Central Sudan. The radiocarbon-dated phytoliths from the burial samples show the presence of Near East domestic cereals in Northern Sudan at least 7000 years ago. Phytoliths also indicate the exploitation of wild, savannah-adapted millets in Central Sudan between 7500 and 6500 years ago. The calculus samples contained starch grains from wheat/barley, pulses and millets, as well as panicoid phytoliths. This evidence shows that Near East domestic cereals were consumed in Northern Africa at least 500 years earlier than previously thought.

Out 2016

Welmoed A. Out, Philippa Ryan, Juan José García-Granero, Judit Barastegui, Lara Maritan, Marco Madella & Donatella Usai, *Plant exploitation in Neolithic Sudan, A review in the light of new data from the cemeteries R12 and Ghaba*. Quaternary International **412** (2016), 36–53.

QuatInt412-036-Supplement1.xlsx, QuatInt412-036-Supplement2.xlsx, QuatInt412-036-Supplement3.pdf

Little is known about the introduction of domesticated crops in Sudan. Substantial early evidence of the cereals wheat and barley has, until recently, been mainly restricted to the post-Neolithic, third millennium BC pre-Kerma site on Sai Island, and prehistoric finds in general are scarce. Interestingly, an analysis of phytoliths from plant depositions within burials and phytoliths and starch from dental calculus from the Nubian Middle Neolithic cemetery R12 and the Early Neolithic cemetery of Ghaba in Central Sudan has recently set back the date of domesticated cereal introduction in Sudan and Egypt by 500 years to around 7000 years ago. This paper presents new plant identifications from R12 and Ghaba that confirm the earlier data and give new information on the use of plants in burial contexts, including indications of processing of panicoid grasses at Ghaba. In addition, the paper presents an overview of the archaeobotanical data from Mesolithic and Neolithic Sudan and provides information about grass exploitation of mid-Holocene Egyptian sites that enables further interpretation of the R12 and Ghaba data. The grave goods from R12 and Ghaba, supported by comparable finds from other sites, show that the commonly attested midHolocene cemeteries offer a valuable archive that can substantially improve the understanding of the importance of both wild and domesticated plants in Sudan at the time of Neolithisation. In

addition, the unexpected early presence of the domesticated cereals wheat and barley in Nubia, supported by finds from later periods, raises the hypothesis that cereal cultivation was practiced in this region from at least the Middle Neolithic onwards.

Keywords: Neolithisation | Crop plants | Plant gathering and cultivation | Symbolic value plants | North-Africa | Plant processing

Aktuell

Adam 2021

David Adam, *The rush to study fast-spreading coronavirus variants.* nature **594** (2021), 19–20.

Questions remain about how quickly B.1.617 variants can spread, and whether they can evade immunity.

Curnoe 2021

Darren Curnoe, Hong-chun Li, Bo-yan Zhou, Chang Sun, Pan-xin Du, Shao-qing Wen, Xue-feng Sun & Hui Li, *Refusal to acknowledge dating complexities of Fuyan Cave strengthens our case*, *Reply to Martinón-Torres et al. and Higham and Douka.* PNAS **118** (2021), e2104818118.

All of the lingual and much of the occlusal and mesial surfaces of FY-HT-2's enamel is missing (Fig. 1A). Therefore, reconstructions of "deerlike" wear simply bear no resemblance to the preservational reality of the tooth.

While we agree that our 14C results should be considered minimum ages, this does not justify using speleothem 230Th/U dates to represent the age of AMHs, nor can they be used to validate an early settlement of the region, as has been claimed (3, 8, 9). An appearance time for AMH in southern China 50 thousand to 45 thousand years ago, in line with molecular results, is yet to be disproven.

Higham 2021

T. F. G. Higham & K. Douka, *The reliability of late radiocarbon dates from the Paleolithic of southern China.* PNAS **118** (2021), e2103798118.

We hold that the radiocarbon data are essentially unreliable, and the results should be considered minimum ages. More work, following higher standards, is required to resolve the issue of chronology of these sites. Until then, these data ought to be set to one side along with conclusions about the late appearance of Homo sapiens in southern China.

Martinón-Torres 2021

María Martinón-Torres, Yanjun Cai, Haowen Tong, Shuwen Pei,e, Song Xing, José María Bermúdez de Castro, Xiujie Wu & Wu Liu, *On the misidentification and unreliable context of the new "human teeth" from Fuyan Cave (China).* PNAS **118** (2021), e2102961118.

Except for the dubious aDNA and 14C analyses of noncontextualized and likely contaminated samples, the U-Th dating of the speleothems and the optically stimulated luminescence of the sediments encasing the fossils confirm the Late Pleistocene ages of the Fuyan sample. Obtaining human aDNA from a nonhuman tooth brings into serious question the credibility of the study by Sun et al. (1). Our proposal of an early presence of H. sapiens in China (2) remains unchallenged.

Maxmen 2021

Amy Maxmen, *Divisive Covid 'lab leak' debate prompts dire warnings from researchers*. nature **594** (2021), 15–16.

Allegations that SARS-CoV-2 escaped from a Chinese lab make it harder for nations to collaborate on ending the pandemic — and fuel online bullying, some scientists say.

Nieder 2017

Andreas Nieder, *Number Faculty Is Rooted in Our Biological Heritage*. Trends in Cognitive Sciences **21** (2017), 403–404.

Our faculty for symbolic number, no matter how much more elaborate than the nonsymbolic capacity of animals, is part of our biological heritage. This insight provides an unprecedented scientific explanation of how we arrive at and grasp numbers.

Núñez 2017

Rafael E. Núñez, *Number – Biological Enculturation Beyond Natural Selection*. Trends in Cognitive Sciences **21** (2017), 404–405.

Undeniably, humans and other species have some biologically endowed capacities for discriminating quantities. Nevertheless, to over-inclusively label all of them as 'numerical' blurs important distinctions and facilitates teleological arguments. In the name of scientific clarity I proposed to at least disentangle the inexact and non-symbolic treatment of quantity from the exact and symbolic one – labeled quantical and numerical, respectively.

Anthropologie

Barras 2021

Colin Barras, *How did ancient humans learn to count?* nature **594** (2021), 22–25.

Recent archaeological studies and other analyses have spurred researchers to construct some of the first detailed hypotheses describing the prehistoric development of number systems.

Mao 2021

Yafei Mao, Mario Ventura & Evan E. Eichler et al., *A high-quality bonobo genome refines the analysis of hominid evolution*. nature **594** (2021), 77–81.

n594-0077-Supplement1.pdf, n594-0077-Supplement2.pdf

The divergence of chimpanzee and bonobo provides one of the few examples of recent hominid speciation1,2. Here we describe a fully annotated, high-quality bonobo genome assembly, which was constructed without guidance from reference genomes by applying a multiplatform genomics approach. We generate a bonobo genome assembly in which more than 98 % of genes are completely annotated and 99 % of the gaps are closed, including the resolution of about half of the segmental duplications and almost all of the full-length mobile elements. We compare the bonobo genome to those of other great apes1,3–5 and identify more than 5,569 fixed structural variants that specifically distinguish the bonobo and chimpanzee lineages. We focus on genes that have been lost, changed in structure or expanded in the last few million years of bonobo evolution. We produce a high-resolution map of incomplete lineage sorting and estimate that around 5.1 % of the human

genome is genetically closer to chimpanzee or bonobo and that more than 36.5 % of the genome shows incomplete lineage sorting if we consider a deeper phylogeny including gorilla and orangutan. We also show that 26 % of the segments of incomplete lineage sorting between human and chimpanzee or human and bonobo are non-randomly distributed and that genes within these clustered segments show significant excess of amino acid replacement compared to the rest of the genome.

Yafei Mao, Claudia R. Catacchio, LaDeana W. Hillier, David Porubsky, Ruiyang Li, Arvis Sulovari, Jason D. Fernandes, Francesco Montinaro, David S. Gordon, Jessica M. Storer, Marina Haukness, Ian T. Fiddes, Shwetha Canchi Murali, Philip C. Dishuck, PingHsun Hsieh, William T. Harvey, Peter A. Audano, Ludovica Mercuri, Ilaria Piccolo, Francesca Antonacci, Katherine M. Munson, Alexandra P. Lewis, Carl Baker, Jason G. Underwood, Kendra Hoekzema, Tzu-Hsueh Huang, Melanie Sorensen, Jerilyn A. Walker, Jinna Hoffman, Françoise Thibaud-Nissen, Sofie R. Salama, Andy W. C. Pang, Joyce Lee, Alex R. Hastie, Benedict Paten, Mark A. Batzer, Mark Diekhans, Mario Ventura & Evan E. Eichler

Núñez 2017

Rafael E. Núñez, *Is There Really an Evolved Capacity for Number?* Trends in Cognitive Sciences **21** (2017), 409–424.

TrCogSci21-409-Comment.pdf, TrCogSci21-409-Reply.pdf

Humans and other species have biologically endowed abilities for discriminating quantities. A widely accepted view sees such abilities as an evolved capacity specific for number and arithmetic. This view, however, is based on an implicit teleological rationale, builds on inaccurate conceptions of biological evolution, downplays human data from non-industrialized cultures, overinterprets results from trained animals, and is enabled by loose terminology that facilitates teleological argumentation. A distinction between quantical (e.g., quantity discrimination) and numerical (exact, symbolic) cognition is needed: quantical cognition provides biologically evolved preconditions for numerical cognition but it does not scale up to number and arithmetic, which require cultural mediation. The argument has implications for debates about the origins of other special capacities

Bibel

Gertoux 2014

Gerard Gertoux, *Dating the Five Books of Moses.* (2014).

Four chronological markers (datable elements but insignificant at the time of writing) allow dating the five books of Moses:
1) the rate of inflation in slave price,
2) the proportion of Amorite names with a conjugated form in the imperfect,
3) the structure in patriarcal treaties and
4) the type of calendars used.

Knohl 2021

Israel Knohl, *An early version of Deuteronomy, or not?* unknown (2021), preprint, 1–4. .

In contrast with Idan Dershowitz's view in his new book The Valedition of Moses, regarding the authenticity of Moses Wilhelm Shapira's scroll fragments, that had hitherto been widely regarded as forgeries, I arrive at the unavoidable conclusion that the scroll is not an early version of the Book of Deuteronomy. Rather it is 'rewritten bible' which was produced after the present version of the Pentateuch had already been compiled.

Knohl 2021

Israel Knohl, *It is a forgery*. unknown (2021), preprint, 1–3. .

In my article 'An Early Version of Deuteronomy?' which was published in the supplement to this newspaper on Passover eve, I contested Moses Shapira's claim that the scroll fragments he had published in 1883 were indeed an early version of the Book of Deuteronomy. Shapira's claim of the scroll's antiquity was recently revived in a new book by Dr. Idan Dershowitz. As I showed in my article, however, it is evident that the author of 'Shapira's scroll' was familiar with the version of the Pentateuch in use today and used it to create his scroll. I argued though, that this did not necessarily imply that the scroll was a modern forgery, and that it could also have been a work of rewritten Torah of a type known to us from the Second Temple period. Recently, however, I have delved more deeply into the language used in the scroll and have reached the considered conclusion that it is in fact a modern forgery.

Biologie

Brockington 2021

Guilherme Brockington, Ana Paula Gomes Moreira, Ronald Fischer & Jorge Moll et al., *Storytelling increases oxytocin and positive emotions and decreases cortisol and pain in hospitalized children*. PNAS **118** (2021), e2018409118.

pnas118-e2018409118-Supplement.pdf

Storytelling is a distinctive human characteristic that may have played a fundamental role in humans' ability to bond and navigate challenging social settings throughout our evolution. However, the potential impact of storytelling on regulating physiological and psychological functions has received little attention. We investigated whether listening to narratives from a storyteller can provide beneficial effects for children admitted to intensive care units. Biomarkers (oxytocin and cortisol), pain scores, and psycholinguistic associations were collected immediately before and after storytelling and an active control intervention (solving riddles that also involved social interaction but lacked the immersive narrative aspect). Compared with the control group, children in the storytelling group showed a marked increase in oxytocin combined with a decrease in cortisol in saliva after the 30-min intervention. They also reported less pain and used more positive lexical markers when describing their time in hospital. Our findings provide a psychophysiological basis for the short-term benefits of storytelling and suggest that a simple and inexpensive intervention may help alleviate the physical and psychological pain of hospitalized children on the day of the intervention.

Keywords: narratives | storytelling | oxytocin | cortisol | LIWC

Guilherme Brockington, Ana Paula Gomes Moreira, Maria Stephani Buso, Sérgio Gomes da Silva, Edgar Altszyler, Ronald Fischer & Jorge Moll

Significance: Storytelling is a unique human skill, yet we know little about its physiological and psychological impact. This study provides evidence of the biomarker changes and beneficial effects of storytelling in children admitted to an intensive care unit. We found that, compared with an active control condition, one storytelling session with hospitalized children leads to an increase in oxytocin, a reduction in cortisol and pain, and positive emotional shifts during a free-association task. These multimodal findings support evolutionary theories of storytelling and demonstrate its physiological and psychological effects under naturalistic stress conditions. These important clinical implications affirm storytelling as a low-cost

and humanized intervention that can improve the well-being of hospitalized children.

Grabung

Finkelstein 2021

Israel Finkelstein, Thomas Römer & Christophe Nicolle et al., *Excavations at Kiriath-jearim, 2019, Preliminary Report*. Tel Aviv: Archaeology **48** (2021), 47–72.

In this article we report the results of the second season of excavations at Kiriath-jearim (Deir el-'Azar). The following topics are emphasized: layout and date of the supposed monumental Iron IIB summit compound; nature of the Iron IIC settlement; date of the Hellenistic fortification; characteristics of the Early Roman period activity. An archaeo-historical analysis follows the presentation of the new data, including updates on past interpretations.

Keywords: Kiriath-jearim, Deir el-Azar, Northern Kingdom, Jeroboam II, Ark Narrative, Ptolemaic period, Seleucid period, Roman Legion

Israel Finkelstein, Thomas Römer, Christophe Nicolle, Zachary C. Dunseth, Assaf Kleiman, Juliette Mas, Naomi Porat & Naama Walzer

Mittelpaläolithikum

Salazar-García 2021

Domingo C. Salazar-García et al., *Dietary evidence from Central Asian Neanderthals, A combined isotope and plant microremains approach at Chagyrskaya Cave (Altai, Russia)*. Journal of Human Evolution **156** (2021), 102985, 1–13.

JHumEvo156-a102985-Supplement.pdf

Neanderthals are known primarily from their habitation of Western Eurasia, but they also populated large expanses of Northern Asia for thousands of years. Owing to a sparse archaeological record, relatively little is known about these eastern Neanderthal populations. Unlike in their western range, there are limited zooarchaeological and paleobotanical studies that inform us about the nature of their subsistence. Here, we perform a combined analysis of carbon and nitrogen stable isotopes on bone collagen and microbotanical remains in dental calculus to reconstruct the diet of eastern Neanderthals at Chagyrskaya Cave in the Altai Mountains of Southern Siberia, Russia. Stable isotopes identify one individual as possessing a high trophic level due to the hunting of large- and medium-sized ungulates, while the analysis of dental calculus also indicates the presence of plants in the diet of this individual and others from the site. These findings indicate eastern Neanderthals may have had broadly similar subsistence patterns to those elsewhere in their range.

Keywords: Stable isotopes | Dental calculus | Diet | Hunting | Central Asia | Plant consumption

Domingo C. Salazar-García, Robert C. Power, Natalia Rudaya, Ksenya Kolobova, Sergey Markin, Andrey Krivoshapkin, Amanda G. Henry, Michael P. Richards & Bence Viola