Liste erstellt am 2018-03-24

References

Aktuell

Chakrabarty 2018

Prosanta Chakrabarty, *My year as a fed*. science **359** (2018), 1066.

A friend had warned me that the entire Washington, D.C., region is an ARE (Acronym Rich Environment). On the first day of my 1-year rotation as an NSF (National Science Foundation) program director, I was finding out just how true that was. After the NEW (New Employee Workshop), I felt my eyes glaze over (perhaps blurred by tears) as I scanned several pages of "Common Acronyms of NSF." What had I gotten myself into?

Chung 2018

Ji-Bum Chung, *Let democracy rule nuclear energy*. nature **555** (2018), 415.

In South Korea, hundreds of well-informed citizens voted on behalf of their country — a technique that should be used more widely, says Ji-Bum Chung.

Forrester 2018

Nicole Forrester, *Independent but not alone*. science **359** (2018), 950.

Growing up, I idealized independence. I always wanted my own efforts to be enough, whether it was completing school assignments without help from my parents or moving into a new apartment by myself. When I decided to pursue a graduate degree, I wanted to develop a novel research program and quickly establish myself as an independent scientist. I sought out an adviser who would give me complete agency over my doctoral work while also offering strong mentorship. But I was naïvely optimistic about what I could accomplish.

Naito 2018

Yuichi I. Naito et al., *"Ecological niche of Neanderthals from Spy Cave revealed by nitrogen isotopes of individual amino acids in collagen.", Reply to "Comment on J. Hum. Evol. 93 (2016) 82–90" J. Hum. Evol. 117 (2018) 53–55.* Journal of Human Evolution **117** (2018), 56–60.

Yuichi I. Naito, Yoshito Chikaraishi, Dorothée G. Drucker, Naohiko Ohkouchi, Patrick Semal, Christoph Wißing & Hervé Bocherens

Therefore, we believe that the approach using glutamate and phenylalanine is appropriate for current studies on fossil hominins as long as appropriate quantitative errors are recognized. However, approaches using multiple amino acid d15N values including proline for TP estimation should be used with caution, due to the open questions about the d15N values of other amino acids and the fact that its robustness has not yet been demonstrated. Further, we assert that the proline-hydroxyproline discrepancy does not undermine the validity of our Neanderthal paleoecological and paleodietary reconstruction, even if some future work on this new isotopic method may refine these reconstructions.

O'Connell 2018

Tamsin C. O'Connell & Matthew J. Collins, *"Ecological niche of Neanderthals from Spy Cave revealed by nitrogen isotopes of individual amino acids in collagen", Comment on J. Hum. Evol. 93 (2016) 82–90.* Journal of Human Evolution **117** (2018), 53–55.

Using other values from published terrestrial C3 plant amino acid nitrogen isotopic data, we can generate estimates of trophic position ranging from 2.1 (from a b value of .3.3 ‰: Paolini et al., 2015), up to a value of 3.3 (from a b value of .12.1 ‰: Styring et al., 2014). A trophic position estimate of 2.1–3.3 spans a dietary range from individuals who consume predominantly plant protein to those who consume a very high proportion of higher trophic resources – essentially the whole range of speculated Neanderthal diets. Thus, Naito et al.'s (2016a) statement in their abstract that Neanderthals "could rely on plants for up to ≈20 % of their protein source" seems premature.

Keywords: Compound-specific nitrogen isotope | analysis | Ecological niche | Trophic position | Trophic discrimination factor | Proline | Hydroxyproline

Wimbush 2018

Stuart Wimbush, *Bitcoin mining is not uneconomic.* nature **555** (2018), 443.

Anthropologie

Hassett 2017

Brenna Hassett, *Built on bones, 15,000 years of urban life and death.* (London 2017).

Tollefson 2018

Jeff Tollefson, *Surprise roots for human culture.* nature **555** (2018), 424–425.

Technology developments linked to climate turbulence.

All of these changes in human behaviour occurred during an extended period of environmental upheaval, punctuated by strong earthquakes and a shift towards a more variable and arid climate. These changes occurred at the same time as larger animals disappeared from the site and were replaced by smaller creatures. "It's a one-two punch combining tectonic shifts and climate shifts," says Rick Potts, who led the work as director of the human origins programme at the Smithsonian Institution in Washington DC. "That's the kind of stuff out of which evolution arises."

The studies push back the timeline for such behaviour by around 100,000 years, adding to a growing body of evidence suggesting that the roots of human culture are deeper and more extensive than once thought.

The latest evidence is "probably not enough to put the question to rest as to what effect the climate variability had on human behaviour", says Nick Blegen, an anthropologist at the Max Planck Institute for the Science of Human History in Jena, Germany. But he says that the findings from Olorgesailie provide solid evidence for a shift towards sophisticated behaviour that predates the earliest evidence for Homo sapiens.

Anthropologie Klima

Smith 2018

Eugene I. Smith et al., *Humans thrived in South Africa through the Toba eruption about 74,000 years ago.* nature **555** (2018), 511–515.

n555-0511-Supplement1.pdf, n555-0511-Supplement2.mp4, n555-0511-Supplement3.mp4, n555-0511-Supplement4.mp4, n555-0511-Supplement5.mp4

Eugene I. Smith, Zenobia Jacobs, Racheal Johnsen, Minghua Ren, Erich C. Fisher, Simen Oestmo, Jayne Wilkins, Jacob A. Harris, Panagiotis Karkanas, Shelby Fitch, Amber Ciravolo, Deborah Keenan, Naomi Cleghorn, Christine S. Lane, Thalassa Matthews & Curtis W. Marean

Approximately 74 thousand years ago (ka), the Toba caldera erupted in Sumatra. Since the magnitude of this eruption was first established, its effects on climate, environment and humans have been debated1. Here we describe the discovery of microscopic glass shards characteristic of the Youngest Toba Tuff—ashfall from the Toba eruption—in two archaeological sites on the south coast of South Africa, a region in which there is evidence for early human behavioural complexity. An independently derived dating model supports a date of approximately 74 ka for the sediments containing the Youngest Toba Tuff glass shards. By defining the input of shards at both sites, which are located nine kilometres apart, we are able to establish a close temporal correlation between them. Our high-resolution excavation and sampling technique enable exact comparisons between the input of Youngest Toba Tuff glass shards and the evidence for human occupation. Humans in this region thrived through the Toba event and the ensuing full glacial conditions, perhaps as a combined result of the uniquely rich resource base of the region and fully evolved modern human adaptation.

Bibel

Batto 1983

Bernard F. Batto, *The Reed Sea, Requiescat in Pace.* Journal of Biblical Literature **102** (1983), i, 27–35.

Despite its popularity, this Reed Sea hypothesis rests upon flimsy dence indeed. A review of that evidence, plus new considerations, it clear that the hypothesis must finally be laid to rest.

In conclusion, at no period in Israelite history is there any evidence that yam sup ever referred to a body of water other than the Red Sea. All occurrences of the term yam sup fit adequately within either the geographical and historical or the mythological typology developed in this paper. There is no reason whatever to posit the existence of a second yam sup. In short, the hypothesis that the Israelites experienced deliverance from their Egyptian pursuers at some historical body of water, whose name was dimly but accurately preserved as the "Reed Sea," should be laid to rest forever. Requiescat in pace!

Batto 1984

Bernard F. Batto, *Red Sea or Reed Sea? How the mistake was made and what yam sûp really means.* Biblical Archaeology Review **10** (1984), iv, 56–63.

Sûp should be connected not with Egyptian p'-t_wf but with the Semitic root sûp, meaning "to come to an end," "to cease to exist." The Hebrew word sôp means simply "end." Yam sûp is the equivalent of yam sôp. This association has been suggested by Norman Snaith, who correctly argues that yam sûp thus refers

to “that distant scarcely known sea away to the south, of which no man knew the boundary. It was the sea at the end of the land.”

Cross 1975
Frank Moore Cross Jr. & David Noel Freedman, *Studies in ancient Yahwistic poetry*. Biblical Resource Series (Grand Rapids ²1997).

Cross 1998
Frank Cross, *From Epic to Canon*, *History and literature in ancient Israel*. (Baltimore 1998).

Friedman 1980
Richard E. Friedman, *The Tabernacle in the Temple*. Biblical Archaeologist **43** (1980), iv, 241–248.
For years the exact nature and origins of the Tabernacle have remained unclear to scholars, and its historicity has been widely challenged. A new look at the descriptions of the physical features of the Tabernacle accepts its existence before Solomon's time but also argues for its later presence within Solomon's Temple.

Friedman 1998
Richard Elliott Friedman, *The Hidden Book in the Bible*. (San Francisco 1998).

Friedman 2017
Richard Elliott Friedman, *The Exodus*, *How it happened and why it matters*. (New York 2017).

Biographie

Callaway 2006
Phillip R. Callaway, *Hartmut Stegemann (1933–2005)*. Biblical Archaeology Review **32** (2006), ii, 18–19.
In the early 1960s, he successfully reconstructed the Thanksgiving Hymns scroll (1QH), which, because of his loyalty to the official editors, he never published under his own name. For many years Professor Stegemann was known for his dissertation on the emergence of the Qumran community. For him, Qumran was not the headquarters and residence of the Essenes, but rather a publishing house for their literature.

Biologie

Lanaspa 2018
Miguel A. Lanaspa et al., *High salt intake causes leptin resistance and obesity in mice by stimulating endogenous fructose production and metabolism*. PNAS **115** (2018), 3138–3143.
pnas115-03138-Supplement.pdf
Miguel A. Lanaspa, Masanari Kuwabara, Ana Andres-Hernando, Nancy Li, Christina Cicerchi, Thomas Jensen, David J. Orlicky, Carlos A. Roncal-Jimenez,

Takuji Ishimoto, Takahiko Nakagawa, Bernardo Rodriguez-Iturbe, Paul S. MacLean & Richard J. Johnson

Dietary guidelines for obesity typically focus on three food groups (carbohydrates, fat, and protein) and caloric restriction. Intake of noncaloric nutrients, such as salt, are rarely discussed. However, recently high salt intake has been reported to predict the development of obesity and insulin resistance. The mechanism for this effect is unknown. Here we show that high intake of salt activates the aldose reductase–fructokinase pathway in the liver and hypothalamus, leading to endogenous fructose production with the development of leptin resistance and hyperphagia that cause obesity, insulin resistance, and fatty liver. A high-salt diet was also found to predict the development of diabetes and nonalcoholic fatty liver disease in a healthy population. These studies provide insights into the pathogenesis of obesity and diabetes and raise the potential for reduction in salt intake as an additional interventional approach for reducing the risk for developing obesity and metabolic syndrome.

Keywords: salt | fructose | obesity | metabolic syndrome | NAFLD

Significance: High salt intake is common in Western diets and likely contributes to hypertension and cardiovascular disease. Recently high salt intake has also been found to both be associated and predict the development of obesity, insulin resistance, and metabolic syndrome. Here we show that high-salt diet activates the aldose reductase (polyol) pathway in the liver, resulting in endogenous fructose production that then induces leptin resistance and the development of metabolic syndrome and fatty liver. Blocking fructose metabolism blocks the effects of high-salt diet. High salt intake also predicts diabetes and nonalcoholic fatty liver disease in Japanese adults. Thus, highsalt diet, an essential micronutrient with no intrinsic caloric value, may have a contributory role in driving obesity and diabetes.

Leslie 2018

Mitch Leslie, *Restraining immunity could lower high blood pressure.* science **359** (2018), 966–967.

Researchers hope to launch clinical trial of new strategy.

Harrison's potential blood pressure treatment, 2-HOBA, thwarts isoketals by muzzling their reactive ends. That probably won't impair our defenses against pathogens. But researchers are divided over whether to test the more powerful immune-suppressing drugs that patients take for illnesses such as psoriasis, Crohn disease, and rheumatoid arthritis. Schiffrin argues that these drugs are too risky to use in hypertension, which people can live with for decades. "We don't want to produce fatal symptoms in a patient ... because we were playing around with their immune system." Drummond, however, says such drugs could serve as short-term treatments for people who don't respond to other therapies.

Islam

Hartmann 1944

Richard Hartmann, *Die Religion des Islam*, *Eine Einführung.* (Darmstadt 1987).

Judentum

Rootsi 2013

Siiri Rootsi et al., *Phylogenetic applications of whole Y-chromosome sequences and the Near Eastern origin of Ashkenazi Levites*. Nature Communications **4** (2013), 2928, 1–9. DOI:10.1038/ncomms3928.

NatComm04-a02928-Supplement1.pdf, NatComm04-a02928-Supplement2.xlsx, NatComm04-a02928-Supplement3.xlsx

Siiri Rootsi, Doron M. Behar, Mari Järve, Alice A. Lin, Natalie M. Myres, Ben Passarelli, G. David Poznik, Shay Tzur, Hovhannes Sahakyan, Ajai Kumar Pathak, Saharon Rosset, Mait Metspalu, Viola Grugni, Ornella Semino, Ene Metspalu, Carlos D. Bustamante, Karl Skorecki, Richard Villems, Toomas Kivisild & Peter A. Underhill

Previous Y-chromosome studies have demonstrated that Ashkenazi Levites, members of a paternally inherited Jewish priestly caste, display a distinctive founder event within R1a, the most prevalent Y-chromosome haplogroup in Eastern Europe. Here we report the analysis of 16 whole R1 sequences and show that a set of 19 unique nucleotide substitutions defines the Ashkenazi R1a lineage. While our survey of one of these, M582, in 2,834 R1a samples reveals its absence in 922 Eastern Europeans, we show it is present in all sampled R1a Ashkenazi Levites, as well as in 33.8 % of other R1a Ashkenazi Jewish males and 5.9 % of 303 R1a Near Eastern males, where it shows considerably higher diversity. Moreover, the M582 lineage also occurs at low frequencies in non-Ashkenazi Jewish populations. In contrast to the previously suggested Eastern European origin for Ashkenazi Levites, the current data are indicative of a geographic source of the Levite founder lineage in the Near East and its likely presence among pre-Diaspora Hebrews.

Skorecki 1997

Karl Skorecki et al., *Y chromosomes of Jewish priests*. nature **385** (1997), 32.

Karl Skorecki, Sara Selig, Shraga Blazer, Robert Bradman, Neil Bradman, P. J. Waburton, Monica Ismajlowicz & Michael F. Hammer

Taken together, our findings define a set of Y chromosomes of recent common origin. Differences which have accumulated in the genomic DNA of the Y chromosomes of Jewish priests during the relatively short time since the establishment of the priesthood, should be useful in defining rates and mechanisms of Y-chromosome evolution.

Thomas 1998

Mark G. Thomas, Karl Skorecki, Haim Ben-Ami, Tudor Parfitt, Neil Bradman & David B. Goldstein, *Origins of Old Testament priests*. nature **394** (1998), 138–140.

n394-0138-Supplement.xls

To the extent that patrilineal inheritance has been followed since sometime around the Temple period (roughly 3,000–2,000 years before present), Y chromosomes of present-day Cohanim and Levites should not only be distinguishable from those of other Jews1, but — given the dispersion of the priesthood following the Temple's destruction — they should derive from a common ancestral type no more recently than the Temple period. Here we show that although Levite Y chromosomes are diverse, Cohen chromosomes are homogeneous. We trace the origin of Cohen chromosomes to about 3,000 years before present, early during the Temple period.

The Levites, unlike the Cohanim, have a significant number of Y chromosomes in three different UEP-defined groups (Table 1), indicating that Levite Y chromosomes have heterogeneous origins. Contemporary Levites, therefore, are not direct patrilineal descendants of a paternally related tribal group. Identification of the frequency of UEP group B chromosomes, and of the Ashkenazic Levite modal haplotype in particular (Supplementary information), in other populations may help in discovering the origins of Levite heterogeneity.

Given the relative isolation of Ashkenazic and Sephardic communities over the past 500 years, the presence of the same modal haplotype in the Cohanim of both communities strongly suggests a common origin. It is interesting, therefore, to estimate the time at which Cohen chromosomes were derived from a common ancestral chromosome (coalescence time). We assume that the modal haplotype is ancestral because of its high frequency.

Klima

Basak 2018

Chandranath Basak, Henning Fröllje & Katharina Pahnke, *Breakup of last glacial deep stratification in the South Pacific*. science **359** (2018), 900–904.

s359-0900-Supplement.pdf

Chandranath Basak, Henning Fröllje, Frank Lamy, Rainer Gersonde, Verena Benz, Robert F. Anderson, Mario Molina-Kescher & Katharina Pahnke

Stratification of the deep Southern Ocean during the Last Glacial Maximum is thought to have facilitated carbon storage and subsequent release during the deglaciation as stratification broke down, contributing to atmospheric CO2 rise. Here, we present neodymium isotope evidence from deep to abyssal waters in the South Pacific that confirms stratification of the deepwater column during the Last Glacial Maximum.The results indicate a glacial northward expansion of Ross Sea Bottom Water and a Southern Hemisphere climate trigger for the deglacial breakup of deep stratification. It highlights the important role of abyssal waters in sustaining a deep glacial carbon reservoir and Southern Hemisphere climate change as a prerequisite for the destabilization of the water column and hence the deglacial release of sequestered CO2 through upwelling.

Kupfer

Berger 2018

Daniel Berger, Elin Figueiredo, Gerhard Brügmann & Ernst Pernicka, *Tin isotope fractionation during experimental cassiterite smelting and its implication for tracing the tin sources of prehistoric metal artefacts*. Journal of Archaeological Science **92** (2018), 73–86.

Provenance studies of metal artefacts are well-established in the interdisciplinary field of science-based archaeology primarily using the chemical and isotopic composition. In the last decades, tin isotopes became gradually more important as a fingerprinting tool for the provenance of tin, but many questions especially regarding the behaviour of tin isotopes during pyrometallurgical processes are still not satisfactorily answered. This paper is a contribution to the understanding of tin isotope fractionation on tin ore smelting under prehistoric conditions and discusses the consequences for tin provenance studies. It presents the results of smelting experiments that were carried out with cassiterite in the laboratory and in the

field, respectively. Besides chemical characterisation with XRF, SEM-EDX and Q-ICP-MS, tin isotope composition of tin ores and smelting products (tin metal, tin vapour, slag) were determined using solution MC-ICP-MS.

Although tin recovery on smelting in the field was low (20–30 %) due to tin losses to fuming and slag formation, the results indicate that the tin isotope composition is less affected than anticipated from theoretical considerations (Rayleigh fractionation). If cassiterite is completely reduced during the smelting reaction the tin metal becomes enriched in heavy tin isotopes with a fractionation of D124Sn = 0.09–0.18 ‰ (0.02–0.05 ‰/u) relative to the original cassiterite. An estimate of the provenance of the original cassiterite and the potential ore source would still be possible because the variability of tin isotope ratios in tin ore provinces is much larger. If the cassiterite becomes incompletely reduced, however, then fractionation increases significantly up to D124Sn = 0.88 ‰ (0.22 ‰/u) and conclusions on tin sources are limited. Similarly, condensed tin vapours (D124Sn = 1.13 ‰ (0.28 ‰/u)) and slags (D124Sn = 0.42–1.32 ‰ (0.11–0.33 ‰/u)) that are by-products of the smelting process show large fractionation with respect to the original tin ore as well, which makes them unsuitable for provenance studies.

Keywords: Smelting experiments | Bowl furnace | Experimental archaeology | Tin isotope analysis | Cassiterite | Tin metal | Evaporation | Isotope fractionation | MC-ICP-MS | Tin provenance

Mesolithikum

Eerkens 1998

Jelmer W. Eerkens, *Reliable and Maintainable Technologies, Artifact Standardization and the Early to Later Mesolitmc Transition in Northern England*. Lithic Technology **23** (1998), 42–53.

Interpreting and explaining numerical variance in artiJact assemblages has not played animportant role inlithic analysis. Asslwwn, this measure has much to offer in understanding prehistoric behavior. Variance in microlith assemblages is examined to test Myers' (l986. 1989b) modelojchanging hunting strategies across the Early-to-Later Mesolithic transition. It is shown that Early Mesolithic microliths are highly standardized relative to analogous items from the Later Mesolithic. This finding is related to weapons design systems and the embeddedness ojmicroliths within seasonal activities. It is argued that Early Mesolithic microliths were produced in large numbers ahead oj time within a reliable weapons systemJocused on intercept hunting. while Later Mesolithic microliths were produced in smaller batches. as needed, within a maintainable system optimized Jor encounter-based hunting.

Mittelpaläolithikum Datierung

Appenzeller 2018

Tim Appenzeller, *Europe's first artists were Neandertals*. science **359** (2018), 852–853.

Spanish cave paintings date to before modern humans arrived in region.

But was this Neandertal artistic creativity equivalent to the art and symbolism practiced by modern humans? At sites across Africa, our direct ancestors were making shell beads and etching abstract designs into egg shells and minerals 80,000 years ago and more. Neandertal achievements were fully comparable, Zilhão insists, and to suggest otherwise implies a double standard. Hublin disagrees. The

startling new dates for the paintings "show that Neandertals had the same potential as modern humans in a number of domains," he acknowledges. But he and others see differences in cognition and culture that even the new research does not erase. And Hublin notes that soon after their arrival in Europe, "modern humans replaced [Neandertals], and there are reasons."

HOFFMANN 2018

D. L. Hoffmann, C. D. Standish & A. W. G. Pike, *U-Th dating of carbonate crusts reveals Neandertal origin of Iberian cave art*. science **359** (2018), 912–915.

s359-0912-Supplement.pdf

D. L. Hoffmann, C. D. Standish, M. García-Diez, P. B. Pettitt, J. A. Milton, J. Zilhão, J. J. Alcolea-González, P. Cantalejo-Duarte, H. Collado, R. de Balbín, M. Lorblanchet, J. Ramos-Muñoz, G.-Ch. Weniger & A. W. G. Pike

The extent and nature of symbolic behavior among Neandertals are obscure. Although evidence for Neandertal body ornamentation has been proposed, all cave painting has been attributed to modern humans. Here we present dating results for three sites in Spain that show that cave art emerged in Iberia substantially earlier than previously thought. Uranium-thorium (U-Th) dates on carbonate crusts overlying paintings provide minimum ages for a red linear motif in La Pasiega (Cantabria), a hand stencil in Maltravieso (Extremadura), and red-painted speleothems in Ardales (Andalucía). Collectively, these results show that cave art in Iberia is older than 64.8 thousand years (ka). This cave art is the earliest dated so far and predates, by at least 20 ka, the arrival of modern humans in Europe, which implies Neandertal authorship.

Physik

CHO 2018

Adrian Cho, *Microwaves from the big bang probe primordial gas clouds as the first stars turn on*. science **359** (2018), 969.