

## Literatur

### Aktuell

#### COUZIN-FRANKEL 2014

Jennifer Couzin-Frankel, *Divulging DNA Secrets Of Dead Stirrs Debate. science* **343** (2014), 356–357.

It dawned on Petersen that the DNA in her freezers brimmed with information relevant to the living—her patients’ families. Was she obliged to alert adult children, siblings, or cousins to consider genetic testing? Was it even legal to mention ethical to share health information obtained through a research study without a patient’s consent?

#### HSIANG 2014

Solomon M. Hsiang & Kyle C. Meng, *Reconciling disagreement over climate–conflict results in Africa. PNAS* **111** (2014), 2100–2103.

pnas111-02100-Supplement1.txt, pnas111-02100-Supplement2.csv

A recent study by Burke et al. [Burke M, Miguel E, Satyanath S, Dykema J, Lobell D (2009) Proc Natl Acad Sci USA 106(49):20670– 20674] reports statistical evidence that the likelihood of civil wars in African countries was elevated in hotter years. A following study by Buhaug [Buhaug H (2010) Proc Natl Acad Sci USA 107(38):16477– 16482] reports that a reexamination of the evidence overturns Burke et al.’s findings when alternative statistical models and alternative measures of conflict are used. We show that the conclusion by Buhaug is based on absent or incorrect statistical tests, both in model selection and in the comparison of results with Burke et al. When we implement the correct tests, we find there is no evidence presented in Buhaug that rejects the original results of Burke et al.

climate change | temperature | security

#### INGALHALIKAR 2014

Madhura Ingalhalikar et al., *On misreading and shooting the messenger, Reply to Joel and Tarrasch. PNAS* **111** (2014), E638.

Madhura Ingalhalikar, Alex Smith, Drew Parker, Theodore D. Satterthwaite, Mark A. Elliott, Kosha Ruparel, Hakon Hakonarson, Raquel E. Gur, Ruben C. Gur & Ragini Verma

We accrued and studied this sample to understand progression of neuropsychiatric disorders, and examined sex differences because of their prominence in the development and course of these disorders. However, we also studied the commonality and encourage Joel and Tarrasch to do so on the data that has been released.

#### JENNINGS 2014

Thomas A. Jennings & Michael R. Waters, *Pre-Clovis Lithic Technology at the Debra L. Friedkin Site, Texas, Comparisons to Clovis through site-level behavior, technological trait-list, and cladistic analyses. American Antiquity* **79** (2014), 25–44.

Humans first left Siberia and colonized the Americas perhaps around 16,000 years ago, and the Clovis archaeological complex in North America has traditionally

been linked to this migratory pulse. Archaeologists searching for evidence of Clovis technological antecedents have focused their attention on the Beringian and Siberian archaeological records. Growing evidence for the pre-Clovis occupation of North America provides a possible alternative source for the origins of Clovis. In this paper, we present new data on the pre-Clovis lithic assemblage from the Debra L. Friedkin site, Texas, and compare Clovis and pre-Clovis lithic technological signatures. We show that while Clovis and pre-Clovis share some important technological traits, they also differ in important ways. We conclude that the pre-Clovis assemblage from Debra L. Friedkin cannot be called “Clovis,” but it could represent a technological antecedent of Clovis.

#### JOEL 2014

Daphna Joel & Ricardo Tarrasch, *On the mis-presentation and misinterpretation of gender-related data, The case of Ingalhalikar’s human connectome study*. [PNAS 111 \(2014\), E637](#).

Nor do Ingalhalikar et al. provide any estimate of the size of these differences (such as Cohen’s  $d$ ) that is needed to evaluate the extent of overlap between the distribution of the strength of these connections in males and in females. Such information is needed to determine whether the statistically significant differences are also meaningful.

#### KAISER 2014

Jocelyn Kaiser, *The Epigenetics Heretic*. [science 343 \(2014\), 361–361](#). Michael Skinner’s claim that chemicals can cause changes to gene expression that persist across multiple generations of animals has stirred excitement—and outrage. But skeptics—and there are many—point out that Skinner’s original experiments have not been replicated, despite several attempts. They find unconvincing his evidence that specific epigenetic changes to DNA are transferred through the germ line. “People will find it hard to believe until there are defined mechanisms,” says reproductive biologist Cheryl Rosenfeld of the University of Missouri, Columbia. To those who don’t flatly dismiss Skinner’s findings, he has raised a tantalizing glimpse of a new phenomenon, one that should be explored further. Transgenerational epigenetics “is either going to be blown away or it’s really going to be confirmed and expanded on and that’s what I find exciting” says epigenetics researcher Wolf Reik of the Babraham Institute in Cambridge, U.K.

## Anthropologie

#### DOMÍNGUEZ-RODRIGO 2014

M. Domínguez-Rodrigo et al., *On meat eating and human evolution, A taphonomic analysis of BK4b (Upper Bed II, Olduvai Gorge, Tanzania), and its bearing on hominin megafaunal consumption*. [Quaternary International 322 \(2014\), 129–152](#).

M. Domínguez-Rodrigo, H. T. Bunn, A. Z. P. Mabulla, E. Baquedano, D. Uribelarra, A. Pérez-González, A. Gidna, J. Yravedra, F. Diez-Martin, C. P. Egeland, R. Barba, M. C. Arriaza, E. Organista & M. Ansón

Recent archaeological work at BK has uncovered abundant taphonomic evidence of megafaunal exploitation by 1.34 Ma hominins. Butchery of small, medium-sized and large carcasses at the site indicate that meat consumption was a crucial adaptive element in the behavior of *Homo erectus*. Current debates on the role played by meat in this early stage of the evolution of the genus *Homo* confront cost signaling interpretations against dietary/physiological interpretations of meat eating

and its relation to brain evolution. BBK (including all the archaeological levels) contains the largest amount of hominin-modified bones and butchered animals documented in the Early Pleistocene archaeological record. This evidence supports that meat consumption was tightly linked to the physiology that shaped the evolution of our genus. Hunting was an integral part of the adaptive behavior of *H. erectus* although megafaunal exploitation may have included more opportunistic behaviors. Site organization also suggests that this species may have exhibited a different within-site spatial organization, which differed from previous hominins, as documented at sites such as FLK Zinj. This unveils the need of new behavioral models to explain the functionality of Acheulian central-place sites.

## Bibel

FAUST 2002

Avraham Faust, *Burnished Pottery and Gender Hierarchy in Iron Age Israelite Society*. [Journal of Mediterranean Archaeology](#) **15** (2002), 53–73.

One of the typical characteristics of Iron Age II pottery in ancient Israel is slip and burnish, which was applied to many vessels, especially bowls, jugs and juglets. No functional explanation can account for the phenomenon, and the reason for the (re)appearance of this treatment at the turn of the first millennium BC should be sought in the social realm. Vessels that received this treatment were used for food consumption, while vessels used for food preparation and storage remained in their ‘natural’ form. In ancient Israel, like many other societies, food preparation was regarded as women’s work and was conducted by them in the private part of the dwelling, while public food consumption was regarded as men’s business. It is suggested that the level of social complexity, which peaked around 1000 BC with the formation of the monarchy, also deepened gender inequalities, which were symbolized by an elaborated treatment of vessels used for ‘masculine’ activities. It is also possible that, while vessels used for women’s activities remained within the realm of ‘nature’ (‘earthenwares’), the slip and burnish transformed the vessels used for masculine activities and brought them into the realm of ‘culture’.

## Biologie

MURCHISON 2014

Elizabeth P. Murchison et al., *Transmissible Dog Cancer Genome Reveals the Origin and History of an Ancient Cell Lineage*. [science](#) **343** (2014), 437–440.

[s343-0437-Supplement1.pdf](#), [s343-0437-Supplement2.xlsx](#)

Elizabeth P. Murchison, David C. Wedge, Ludmil B. Alexandrov, Beiyuan Fu, Inigo Martincorena, Zemin Ning, Jose M. C. Tubio, Emma I. Werner, Jan Allen, Andriago Barboza De Nardi, Edward M. Donelan, Gabriele Marino, Ariberto Fassati, Peter J. Campbell, Fengtang Yang, Austin Burt, Robin A. Weiss & Michael R. Stratton

Canine transmissible venereal tumor (CTVT) is the oldest known somatic cell lineage. It is a transmissible cancer that propagates naturally in dogs. We sequenced the genomes of two CTVT tumors and found that CTVT has acquired 1.9 million somatic substitution mutations and bears evidence of exposure to ultraviolet light. CTVT is remarkably stable and lacks subclonal heterogeneity despite thousands of rearrangements, copy-number changes, and retrotransposon insertions. More

than 10,000 genes carry nonsynonymous variants, and 646 genes have been lost. CTVT first arose in a dog with low genomic heterozygosity that may have lived about 11,000 years ago. The cancer spawned by this individual dispersed across continents about 500 years ago. Our results provide a genetic identikit of an ancient dog and demonstrate the robustness of mammalian somatic cells to survive for millennia despite a massive mutation burden.

PARKER 2014

Heidi G. Parker & Elaine A. Ostrander, *Hiding in Plain View—An Ancient Dog in the Modern World*. *science* **343** (2014), 376–378.

The sequence of a transmissible cancer provides a snapshot of a dog from the distant past.

## Grundlagen

SHEA 2014

John J. Shea, *Sink the Mousterian? Named stone tool industries (NASTIES) as obstacles to investigating hominin evolutionary relationships in the Later Middle Paleolithic Levant*. *Quaternary International* (2014), preprint, 1–11. DOI:10.1016/j.quaint.2014.01.024.

The Later Middle Paleolithic lithic archaeological record for the East Mediterranean Levant has been invoked to support competing and contradictory models for the evolutionary relationships between *Homo sapiens* and *Homo neanderthalensis*. The lithic evidence has not helped paleoanthropology achieve a conclusive resolution about this issue because archaeologists continue to structure inter-assemblage lithic variability in terms of stone tool industries such as the “Mousterian”. This paper explores the problems that named stone tool industries (or “NASTIES”) cause for Paleolithic archaeology, and it explores alternatives to them.

## Jungpaläolithikum

OSBORN 2014

Alan J. Osborn, *Eye of the Needle, Cold stress, clothing, and sewing technology during the Younger Dryas cold event in North America*. *American Antiquity* **79** (2014), 45–58.

This paper examines the possible underlying systemic context(s) for spurred flake graters and eyed bone needles recovered from Paleoindian sites in North America. The idea that spurred flake graters and eyed bone needles were closely associated is not new. Archaeologists in both Eurasia and North America have also proposed that eyed bone and ivory needles were used for manufacturing tailored skin clothing. It is suggested here that spurred flake graters and eyed bone needles may, in fact, be the material correlates of critical non-subsistence related work carried out by women to meet the challenges of very severe winters and cold stress of the Younger Dryas Cold Event (YDCE) between 12,900–11,600 cal. B.P. It is argued here that such expediently produced flake implements and curated sewing technology including eyed needles ultimately reflect the significant ecological bottleneck(s) posed by the YDCE for Paleoindian populations. Metric attributes of both spurred flake graters and eyed bone needles, their spatial co-occurrence in archaeological contexts, and their temporal co-occurrence within the YDCE lend empirical support for this causal argument.

## Klima

### LAMY 2014

F. Lamy et al., *Increased Dust Deposition in the Pacific Southern Ocean During Glacial Periods*. [science](#) **343** (2014), 403–407.

s343-0403-Supplement.pdf

F. Lamy, R. Gersonde, G. Winckler, O. Esper, A. Jaeschke, G. Kuhn, J. Ullermann, A. Martinez-Garcia, F. Lambert & R. Kilian

Dust deposition in the Southern Ocean constitutes a critical modulator of past global climate variability, but how it has varied temporally and geographically is underdetermined. Here, we present data sets of glacial-interglacial dust-supply cycles from the largest Southern Ocean sector, the polar South Pacific, indicating three times higher dust deposition during glacial periods than during interglacials for the past million years. Although the most likely dust source for the South Pacific is Australia and New Zealand, the glacial-interglacial pattern and timing of lithogenic sediment deposition is similar to dust records from Antarctica and the South Atlantic dominated by Patagonian sources. These similarities imply large-scale common climate forcings, such as latitudinal shifts of the southern westerlies and regionally enhanced glaciogenic dust mobilization in New Zealand and Patagonia.

### THOMAS 2013

Elizabeth R. Thomas, Thomas J. Bracegirdle, John Turner & Eric W. Wolff, *A 308 year record of climate variability in West Antarctica*. [Geophysical Research Letters](#) **40** (2013), 5492–5496.

We present a new stable isotope record from Ellsworth Land which provides a valuable 308 year record (1702–2009) of climate variability from coastal West Antarctica. Climate variability at this site is strongly forced by sea surface temperatures and atmospheric pressure in the tropical Pacific and related to local sea ice conditions. The record shows that this region has warmed since the late 1950s, at a similar magnitude to that observed in the Antarctic Peninsula and central West Antarctica; however, this warming trend is not unique. More dramatic isotopic warming (and cooling) trends occurred in the mid-nineteenth and eighteenth centuries, suggesting that at present, the effect of anthropogenic climate drivers at this location has not exceeded the natural range of climate variability in the context of the past  $\approx 300$  years.

### WILLERSLEV 2014

Eske Willerslev et al., *Fifty thousand years of Arctic vegetation and megafaunal diet*. [nature](#) **506** (2014), 47–51.

n506-0047-Supplement.zip

Eske Willerslev, John Davison, Mari Moora, Martin Zobel, Eric Coissac, Mary E. Edwards, Eline D. Lorenzen, Mette Vestergaard, Galina Gussarova, James Haile, Joseph Craine, Ludovic Gielly, Sanne Boessenkool, Laura S. Epp, Peter B. Pearman, Rachid Cheddadi, David Murray, Kari Anne Bråthen, Nigel Yoccoz, Heather Binney, Corinne Cruaud, Patrick Wincker, Tomasz Goslar, Inger Greve Alsos, Eva Bellemain, Anne Krag Brysting, Reidar Elven, Jørn Henrik Sønstebo, Julian Murton, Andrei Sher, Morten Rasmussen, Regin Rønn, Tobias Mourier, Alan Cooper, Jeremy Austin, Per Möller, Duane Froese, Grant Zazula, François Pompanon, Delphine Rioux, Vincent Niderkorn, Alexei Tikhonov, Grigoriy Savvinov, Richard G. Roberts, Ross D. E. MacPhee, M. Thomas P. Gilbert, Kurt H. Kjær, Ludovic Orlando, Christian Brochmann & Pierre Taberlet

Although it is generally agreed that the Arctic flora is among the youngest and least diverse on Earth, the processes that shaped it are poorly understood. Here we present 50 thousand years (kyr) of Arctic vegetation history, derived from the first large-scale ancient DNA metabarcoding study of circumpolar plant diversity. For this interval we also explore nematode diversity as a proxy for modelling vegetation cover and soil quality, and diets of herbivorous megafaunal mammals, many of which became extinct around 10 kyr BP (before present). For much of the period investigated, Arctic vegetation consisted of dry steppe-tundra dominated by forbs (non-graminoid herbaceous vascular plants). During the Last Glacial Maximum (25–15 kyr BP), diversity declined markedly, although forbs remained dominant. Much changed after 10 kyr BP, with the appearance of moist tundra dominated by woody plants and graminoids. Our analyses indicate that both graminoids and forbs would have featured in megafaunal diets. As such, our findings question the predominance of a Late Quaternary graminoid-dominated Arctic mammoth steppe.

## Kultur

### ERLANDSON 2014

Jon M. Erlandson, Jack L. Watts & Nicholas P. Jew, *Darts, Arrows, and Archaeologists, Distinguishing dart and arrow points in the archaeological record*. [American Antiquity 79 \(2014\), 162–169](#).

Using several methods to distinguish dart and arrow points, archaeologists have suggested that the bow and arrow appeared in various parts of the world between  $\approx 65,000$  and 1,000 years ago. Hildebrandt and King (2012) proposed a dart-arrow index (DAI) to help differentiate dart and arrow points, rejecting claims that the bow and arrow was introduced to western North America prior to the Late Holocene. We used the DAI and other methods to evaluate  $\approx 11,700$ -year-old projectile points from Santa Rosa Island, obtaining mean values below the threshold for darts, comparable to several North American arrow point types. We have no direct evidence that these small points were used on darts, arrows, or hand-thrown spears, but faunal associations suggest that they may have served as harpoon tips used on atlatl darts to capture birds, fish, and marine mammals. The DAI and other methods for discriminating between dart and arrow points are based almost exclusively on ethnographic and archaeological specimens from interior regions. Our analysis suggests that such methods should not be applied universally, especially in coastal or other aquatic settings, and that archaeologists should continue to critically assess the antiquity of the bow and arrow and the function of projectile points worldwide.

### WALDE 2014

Dale Walde, *Concerning the Atlatl and the Bow, Further observations regarding arrow and dart points in the archaeological record*. [American Antiquity 79 \(2014\), 156–161](#).

Hildebrandt and King (2012) propose a new method for distinguishing between archaeologically obtained atlatl darts and arrow points, suggesting their dart-arrow index identifies specimens more accurately than previously developed multivariate approaches. They assert that use of their index supports conclusions that the bow was a superior technology and replaced the atlatl quickly. I use their index, as well as Shott's (1997) equations, to analyze southern Saskatchewan archaeological point specimens. My results suggest that the proposed dart-arrow index performs poorly

for Canadian Plains specimens and that atlatl and bow technology coexisted for an extended period of time.

## Metallzeiten

HALL 1991

Mark E. Hall, *Damascus Steel: Myths and Reality*. [Journal of the Association of Graduate Near Eastern Students at UC Berkeley](#) **2** (1991), i, 38–41.

Using data from the archaeological record, literary sources, and materials science, this paper examines the technology and origins of Damascus steel. It is believed to have been made from ultra-high carbon steel. The origins for Damascus steel do not lie in Syria. Archaeological evidence points to the use of ultra-high carbon steel in the Indian sub-continent and Persia by the first century A.D. The occurrence of damascened blades coincides with the areas conquered by the Muslims during the Middle ages.

REIBOLD 2006

M. Reibold, P. Paufler, A. A. Levin, W. Kochmann, N. Pätzke & D. C. Meyer, *Carbon nanotubes in an ancient Damascus sabre*. [nature](#) **444** (2006), 286.

cementite particles. As the nanoscale structure of Damascus steel emerges, a refined interpretation of its remarkable mechanical properties should become possible.

## Methoden

SKOGLUND 2014

Pontus Skoglund et al., *Separating endogenous ancient DNA from modern day contamination in a Siberian Neandertal*. [PNAS](#) **111** (2014), 2229–2234.

Pontus Skoglund, Bernd H. Northoff, Michael V. Shunkov, Anatoli P. Derevianko, Svante Pääbo, Johannes Krause & Mattias Jakobsson

One of the main impediments for obtaining DNA sequences from ancient human skeletons is the presence of contaminating modern human DNA molecules in many fossil samples and laboratory reagents. However, DNA fragments isolated from ancient specimens show a characteristic DNA damage pattern caused by miscoding lesions that differs from present day DNA sequences. Here, we develop a framework for evaluating the likelihood of a sequence originating from a model with postmortem degradation—summarized in a postmortem degradation score—which allows the identification of DNA fragments that are unlikely to originate from present day sources. We apply this approach to a contaminated Neandertal specimen from Okladnikov Cave in Siberia to isolate its endogenous DNA from modern human contaminants and show that the reconstructed mitochondrial genome sequence is more closely related to the variation of Western Neandertals than what was discernible from previous analyses. Our method opens up the potential for genomic analysis of contaminated fossil material.

paleogenomics | human evolution

## Religion

MORRIS 2006

Christine Morris & Alan Peatfield, *Experiencing ritual, Shamanic elements in Minoan religion*. In: MICHAEL WEDDE (Hrsg.), *Celebrations, Anthropological and archaeological approaches to ancient Greek ritual*. Norwegian Institute in Athens (Uppsala 2006), 35–59.

In conclusion, we have argued that the language and definitions of the scholarship of Minoan religion are embedded with western presuppositions about the mind/body relationship. Furthermore they foreclose understanding of Minoan religion within Classical and Judaeo-Christian theistic models. By re-introducing the body as an active element within Minoan religion, we have sought to re-establish that religion is an experiential, not merely intellectual process. This opens up new ways of exploring the interaction of religion and society in Minoan Crete. When ritual action is analysed only within the intellectual dimension, it is easy to assume its meanings are forgotten and unrecoverable. But as so often re-iterated in shamanic scholarship, the human body is universal. The active involvement of the body in the religious process means that, to quote Edith Turner, ‘the frigidity of ritual action gives way to the orgasm of experience’ (1992:163) and that the human body is itself the dynamic instrument of ritual.

## Story or Book

GEE 2014

Henry Gee, *The human puzzle*. *nature* **506** (2014), 30–31.

Henry Gee relishes the memoir of Svante Pääbo, a leader in the field of ancient DNA.

The book is primarily a memoir. Pääbo recounts his life story with a Fennoscandian frankness that some readers might find disconcerting. Along the way, he tells us a great deal about science and scientists. There is mercifully little of the didactic treatment of the structure of DNA and genes that authors feel obliged to rehearse on such occasions. Dispensing quickly with such banal necessities, Pääbo gets on with the cutting-edge science to which he was witness, and in some cases helped to create — the astonishing development of devices that could be used to sequence DNA ever more efficiently and at lower and lower cost. He describes the technology clearly, almost like a recipe book: you feel you should have Neanderthal Man on the bench as you try its techniques for yourself.