Liste erstellt am 2013-02-11

Literatur

Aktuell

Couzin-Frankel 2013

Jennifer Couzin-Frankel, *Author of Popular Blog That Charged Fraud Unmasked*. science **339** (2013), 132.

By Brookes's count, science-fraud.org posted about 100 accusations. More than a dozen of those papers have been corrected or retracted. Still, Brookes may have opened himself up to charges of defamation with his presumptions that the scientists he named had committed fraud. "You've got someone who is publishing on a blog statements that are allegations of fact," meaning they are "provably true or provably false," says Katharine Larsen, an attorney at Levine Sullivan Koch & Schulz in Philadelphia, Pennsylvania, whose focus is defamation and free speech. Furthermore, she says, although "there is a constitutional right in the first amendment to speak anonymously," that's balanced against other rights, such as the right of an aggrieved party to seek redress for an alleged injury. There's no question that image modification is widespread—but gauging the intent behind it isn't always easy. The Journal of Cell Biology (JCB) has performed image analysis prepublication for just over a decade. One percent of papers have their acceptance revoked for inappropriate image manipulation.

Dymond 2013

Simon Dymond, Mark Haselgrove & Anthony McGregor, *Clever crows or unbalanced birds?* PNAS **110** (2013), E336.

Thus, although it is unclear why counterbalancing was not employed, it is plausible that performance on UCA trials was influenced by prior exposure to HCA trials. This being the case, the findings of Taylor et al. are uninterpretable.

Lo 2013

Min-Hui Lo & James S. Famiglietti, *Irrigation in California's Central Valley strengthens the southwestern U.S. water cycle*. Geophysical Research Letters (2013), preprint, 1–6. DOI:10.1002/GRL.50108.

GeoResLet2013-preprint-Supplement1.gif, GeoResLet2013-preprint-Supplement2.pdf, GeoResLet2013-preprint-Supplement3.txt

Characterizing climatological and hydrological responses to agricultural irrigation continues to be an important challenge to understanding the full impact of water management on the Earth's environment and hydrological cycle. In this study, we use a global climate model, combined with realistic estimates of regional agricultural water use, to simulate the local and remote impacts of irrigation in California's Central Valley. We demonstrate a clear mechanism that the resulting increase in evapotranspiration and water vapor export significantly impacts the atmospheric circulation in the southwestern United States, including strengthening the regional hydrological cycle. We also identify that irrigation in the Central Valley initiates a previously unknown, anthropogenic loop in the regional hydrological cycle, in which summer precipitation is increased by 15 %, causing a corresponding increase in Colorado River streamflow of ≈30 %. Ultimately, some of this additional streamflow is returned to California via managed diversions through the Colorado River aqueduct and the All-American Canal.

Taylor 2013

Alex H. Taylor, Rachael Miller & Russell D. Gray, *Clear evidence of habituation counters counterbalancing, Reply to Dymond et al.* PNAS **110** (2013), E337.

Anthropologie

Beyene 2013

Yonas Beyene et al., *The characteristics and chronology of the earliest Acheulean at Konso, Ethiopia.* PNAS **110** (2013), 1584–1591.

Yonas Beyene, Shigehiro Katoh, Giday WoldeGabriel, William K. Hart, Kozo Uto, Masafumi Sudo, Megumi Kondo, Masayuki Hyodo, Paul R. Renne, Gen Suwa and Berhane Asfaw

The Acheulean technological tradition, characterized by a large (>10 cm) flake-based component, represents a significant technological advance over the Oldowan. Although stone tool assemblages attributed to the Acheulean have been reported from as early as circa 1.6–1.75 Ma, the characteristics of these earliest occurrences and comparisons with later assemblages have not been reported in detail. Here, we provide a newly established chronometric calibration for the Acheulean assemblages of the Konso Formation, southern Ethiopia, which span the time period ≈1.75 to <1.0 Ma. The earliest Konso Acheulean is chronologically indistinguishable from the assemblage recently published as the world's earliest with an age of ≈1.75 Ma at Kokiselei, west of Lake Turkana, Kenya. This Konso assemblage is characterized by a combination of large picks and crude bifaces/unifaces made predominantly on large flake blanks. An increase in the number of flake scars was observed within the Konso Formation handaxe assemblages through time, but this was less so with picks. The Konso evidence suggests that both picks and handaxes were essential components of the Acheulean from its initial stages and that the two probably differed in function. The temporal refinement seen, especially in the handaxe forms at Konso, implies enhanced function through time, perhaps in processing carcasses with long and stable cutting edges. The documentation of the earliest Acheulean at ≈1.75 Ma in both northern Kenya and southern Ethiopia suggests that behavioral novelties were being established in a regional scale at that time, paralleling the emergence of Homo erectus-like hominid morphology.

chronostratigraphy | Early Pleistocene | lithic technology development

Milinski 2013

Manfred Milinski, *Chimps play fair in the ultimatum game.* PNAS **110** (2013), 1978–1979.

Before testing, it was necessary to make sure that all subjects had understood the procedure. Chimpanzees had to: (i) be able to pass a token to another chimpanzee; (ii) have no initial preference for the tokens; (iii) be able to discriminate between the reward quantities; (iv) be trained on the value of the tokens with a naïve and passive partner, who was rewarded according to the token selection; and (v) show that they preferred the token that brought them the larger reward (indicating understanding of the token values) when a passive and naïve partner was present.

Proctor 2013

Darby Proctor, Rebecca A. Williamson, Frans B. M. de Waal & Sarah F. Brosnan, *Chimpanzees play the ultimatum game.* PNAS **110** (2013), 2070–2075.

Is the sense of fairness uniquely human? Human reactions to reward division are often studied by means of the ultimatum game, in which both partners need to agree on a distribution for both to receive rewards. Humans typically offer generous portions of the reward to their partner, a tendency our close primate relatives have thus far failed to show in experiments. Here we tested chimpanzees (Pan troglodytes) and human children on a modified ultimatum game. One individual chose between two tokens that, with their partner's cooperation, could be exchanged for rewards. One token offered equal rewards to both players, whereas the other token favored the chooser. Both apes and children responded like humans typically do. If their partner's cooperation was required, they split the rewards equally. However, with passive partners—a situation akin to the so-called dictator game—they preferred the selfish option. Thus, humans and chimpanzees show similar preferences regarding reward division, suggesting a long evolutionary history to the human sense of fairness.
inequity aversion | equality | reciprocity | sharing | behavioral economics

Rink 2013

William J. Rink, Norbert Mercier, Dušan Mihailović, Mike W. Morley, Jeroen W. Thompson & Mirjana Roksandic, *New Radiometric Ages for the BH-1 Hominin from Balanica (Serbia): Implications for Understanding the Role of the Balkans in Middle Pleistocene Human Evolution.* PLoS ONE **8** (2013), e54608. DOI:10.1371/journal.pone.0054608.
pone08-e54608-Supplement1.tif, pone08-e54608-Supplement2.tif, pone08-e54608-Supplement3.doc, pone08-e54608-Supplement4.doc, pone08-e54608-Supplement5.doc, pone08-e54608-Supplement6.doc, pone08-e54608-Supplement7.doc
Newly obtained ages, based on electron spin resonance combined with uranium series isotopic analysis, and infrared/postinfrared luminescence dating, provide a minimum age that lies between 397 and 525 ka for the hominin mandible BH-1 from Mala Balanica cave, Serbia. This confirms it as the easternmost hominin specimen in Europe dated to the Middle Pleistocene. Inferences drawn from the morphology of the mandible BH-1 place it outside currently observed variation of European Homo heidelbergensis. The lack of derived Neandertal traits in BH-1 and its contemporary specimens in Southeast Europe, such as KocabasÕ, Vasogliano and Ceprano, coupled with Middle Pleistocene synapomorphies, suggests different evolutionary forces acting in the east of the continent where isolation did not play such an important role during glaciations.

Wood 2013

Bernard Wood, *Gritting their teeth.* nature **493** (2013), 486–487.
A comparison of the wearing effect of plant-derived silica and desert dust on tooth enamel suggests that extreme wear on teeth might not be caused by food. The findings may change some thoughts about the diets of human ancestors.

Biologie

Meyer 2013

Axel Meyer, *Austausch von Genen zwischen verschiedenen Wirbeltierarten.* Spektrum der Wissenschaft **2013**, i, 16–19.
Die urtümlichen Neunaugen haben einiges Erbmaterial mit manchen viel „moderneren“ Knochenfischen gemeinsam – allerdings nicht von alters her. Offenbar sind hier Gene von einer Art zur anderen gesprungen.

Die große Frage ist nun, wie die DNA-Stücke überhaupt Artgrenzen „überspringen“ konnten und wie sie schließlich bis ins Genom der Keimbahn der neuen Wirtsfische gelangten, so dass diese sie nun „normal“ – vertikal – an Nachkommen weitervererben. Interessanterweise ließ sich das Transposon auch bei einigen Parasiten der betroffenen Fischarten nachweisen, die zu den Wirbellosen beziehungsweise Einzellern zählen – sonst kommt dieses bestimmte Tc1-Element außerhalb der Wirbeltiere nicht vor. Waren jene Plagegeister selbst Opfer geworden und womöglich auch an den horizontalen Transfers von Tc1 beteiligt?
Für die Evolutionsforscher ist der Übertragungsweg von Erbmaterial zwischen Räuber und Beutetier etwas Neues. Was dies für die Vorstellungen zur organismischen Evolution bedeutet, bleibt abzuwarten.

Energie

Hodson 2013

Peter V. Hodson, *History of environmental contamination by oil sands extraction*. PNAS **110** (2013), 1569–1570.

Kurek et al. provide a clear warning of possible future problems if PAH inputs to lakes continue to climb in tandem with oil sands production. There are clear research needs related to the cumulative effects of oil sands contaminants on the function of lake ecosystems, assessment of effects on terrestrial ecosystems, forecasting contaminant loadings and effects on lakes of industrial expansion, and finer-scale sampling to define the geographic extent of oil sands contamination and potential ecological effects.

Kurek 2013

Joshua Kurek, Jane L. Kirk, Derek C. G. Muir, Xiaowa Wang, Marlene S. Evans & John P. Smol, *Legacy of a half century of Athabasca oil sands development recorded by lake ecosystems*. PNAS **110** (2013), 1761–1766.

The absence of well-executed environmental monitoring in the Athabasca oil sands (Alberta, Canada) has necessitated the use of indirect approaches to determine background conditions of freshwater ecosystems before development of one of the Earth's largest energy deposits. Here, we use highly resolved lake sediment records to provide ecological context to ≈50 y of oil sands development and other environmental changes affecting lake ecosystems in the region. We show that polycyclic aromatic hydrocarbons (PAHs) within lake sediments, particularly C1-C4–alkylated PAHs, increased significantly after development of the bitumen resource began, followed by signicant increases in dibenzothiophenes. Total PAH uxes in the modern sediments of our six study lakes, including one site ≈90 km northwest of the major development area, are now ≈2.5–23 times greater than ≈1960 levels. PAH ratios indicate temporal shifts fromprimarily wood combustion to petrogenic sources that coincide with greater oil sands development. Canadian interimsediment quality guidelines for PAHs have been exceeded since the mid-1980s at the most impacted site. A paleoecological assessment of Daphnia shows that this sentinel zooplankter has not yet been negatively impacted by decades of high atmospheric PAH deposition. Rather, coincident with increases in PAHs, climate-induced shifts in aquatic primary production related to warmer and drier conditions are the primary environmental drivers producing marked daphniid shifts after ≈1960 to 1970. Because of the striking increase in PAHs, elevated primary production, and zooplankton changes, these oil sands lake ecosystems have entered new ecological states completely distinct from those of previous centuries.

atmospheric deposition | Cladocera | contaminants | environmental stressors | paleolimnology

Grundlagen

Jones 2013

Nicholaos Jones, *Liberal Arts, and the advantages of being useless.* (Unpublished 2013). <http://www.academia.edu/attachments/30477361/download_file> (2013-02-03).

A Liberal Arts degree is useless, because either you can't use the name of the degree to read off what you're going to do with the degree, or you can but the job you read off is known to not pay well. And the reason you can't do these things is that Liberal Arts disciplines are designed to give you the tools for being an active and responsible citizen, rather than tools for performing a specialized task for someone else.

Isotope

Somerville 2013

Andrew D. Somerville, Mikael Fauvelle & Andrew W. Froehle, *Applying new approaches to modeling diet and status: Isotopic evidence for commoner resiliency and elite variability in the Classic Maya lowlands.* Journal of Archaeological Science **40** (2013), 1539–1553.

Classic Maya states were characterized by a high degree of socioeconomic stratification. This paper investigates the degree to which status, as defined by grave goods and tomb construction, influenced dietary patterns of elites and commoners throughout the Classic Period (200–900/1000 AD) of the southern lowlands. We compile a database (N = 102) of previously-published stable isotope ratios (d13C collagen, d13C apatite, and d15N collagen) from Maya bone mineral and collagen, and interrogate these data through two new isotopic modeling techniques: a simple carbon isotope model (Kellner and Schoeninger, 2007; Froehle et al., 2010) and a multivariate isotope model (Froehle et al., 2012). We find that Maya elite diet varied significantly through time in terms of maize consumption and trophic level, while commoner diet remained remarkably stable. These findings provide new information relevant to studies of ancient Maya class structure and to studies of subsistence strategies of the pre-Columbian Americas.

Keywords: Apatite | Collagen | Maya | Bioarchaeology | Simple carbon isotope model | Multivariate isotope model | Paleodiet

Judentum

Faust 2010

Avraham Faust, *The Archaeology of the Israelite Cult: Questioning the Consensus.* Bulletin of the American Schools of Oriental Research **360** (2010), 23–35.

Israelite forms of religious expression have received a great deal of scholarly attention. Archaeologists and biblical scholars have scrutinized the textual and archaeological data, and a consensus regarding the frequency and distribution of Israelite places of cult seems to be emerging. The aim of this article is to reexamine the

available data on Israelite places of worship within the broader context of Bronze Age and Iron Age temples. The evidence suggests that current views on ancient Israelite cultic sites, while offering many important new insights, have focused on exceptional cases that have been mischaracterized as representative samples of Israelite religion. A different view of Israelite cult practice is therefore offered, one that has the potential to shed new light on Israelite religion.

Klima

Abreu 2013

J. A. Abreu, J. Beer, A. Ferriz-Mas, K. G. McCracken & F. Steinhilber, *Is there a planetary influence on solar activity?* Astronomy & Astrophysics **548** (2013), A88. DOI:10.1051/0004-6361/201219997.

Context. Understanding the Sun's magnetic activity is important because of its impact on the Earth's environment. Direct observations of the sunspots since 1610 reveal an irregular activity cycle with an average period of about 11 years, which is modulated on longer timescales. Proxies of solar activity such as 14C and 10Be show consistently longer cycles with well-defined periodicities and varying amplitudes. Current models of solar activity assume that the origin and modulation of solar activity lie within the Sun itself; however, correlations between direct solar activity indices and planetary configurations have been reported on many occasions. Since no successful physical mechanism was suggested to explain these correlations, the possible link between planetary motion and solar activity has been largely ignored.
Aims. While energy considerations clearly show that the planets cannot be the direct cause of the solar activity, it remains an open question whether the planets can perturb the operation of the solar dynamo. Here we use a 9400 year solar activity reconstruction derived from cosmogenic radionuclides to test this hypothesis.
Methods. We developed a simple physical model for describing the time-dependent torque exerted by the planets on a non-spherical tachocline and compared the corresponding power spectrum with that of the reconstructed solar activity record.
Results. We find an excellent agreement between the long-term cycles in proxies of solar activity and the periodicities in the planetary torque and also that some periodicities remain phase-locked over 9400 years.
Conclusions. Based on these observations we put forward the idea that the long-term solar magnetic activity is modulated by planetary effects. If correct, our hypothesis has important implications for solar physics and the solar-terrestrial connection.
Key words. Sun: dynamo – solar-terrestrial relations – solar wind – Sun: helioseismology – planet-star interactions – magnetohydrodynamics (MHD)

Büntgen 2013

Ulf Büntgen, Tomáš Kyncl, Christian Ginzler, David S. Jacks, Jan Esper, Willy Tegel, Karl-Uwe Heussner & Josef Kyncl, *Filling the Eastern European gap in millennium-long temperature reconstructions.* PNAS **110** (2013), 1773–1778.

Tree ring–based temperature reconstructions form the scientific backbone of the current global change debate. Although some European records extend into medieval times, high-resolution, long-term, regional-scale paleoclimatic evidence is missing for the eastern part of the continent. Here we compile 545 samples of living trees and historical timbers from the greater Tatra region to reconstruct

interannual to centennial-long variations in Eastern European May–June temperature back to 1040 AD. Recent anthropogenic warming exceeds the range of past natural climate variability. Increased plague outbreaks and political conflicts, as well as decreased settlement activities, coincided with temperature depressions. The Black Death in the mid-14th century, the Thirty Years War in the early 17th century, and the French Invasion of Russia in the early 19th century all occurred during the coldest episodes of the last millennium. A comparison with summer temperature reconstructions from Scandinavia, the Alps, and the Pyrenees emphasizes the seasonal and spatial specificity of our results, questioning those large-scale reconstructions that simply average individual sites.
climate change | dendroclimatology | Eastern Europe | human history

Charbonneau 2013

Paul Charbonneau, *The planetary hypothesis revived.* nature **493** (2013), 613–614.

The Sun's magnetic activity varies cyclically over a period of about 11 years. An analysis of a new, temporally extended proxy record of this activity hints at a possible planetary influence on the amplitude of the cycle.
The authors' data are rock solid and their analysis techniques straightforward and entirely conventional. Working with a 9,400-year-long, high-quality time series for a well-known solar-activity proxy4, namely, the production rate of the radioactive isotope beryllium-10 (10Be) as determined from ice cores5, they show that the proxy's time series exhibits many of the same long periodicities as those characterizing the temporal variations of the angular-momentum vector associated with planetary orbital motions. The match is almost perfect for five of the six most prominent periodicities longer than 50 years in the solar-activity record. No purely dynamo-based explanation that I am aware of yields anything remotely close to such an outstanding fit. By using a numerical method known as Monte Carlo simulation, Abreu et al. estimate the probability of coincidence for these long periodicities to be less than 1 in 1E6, although this is probably an underestimate, given the properties of the random signals used to test for coincidence between the time series of the 10Be proxy and that of the planetary angular momentum.

Feakins 2013

Sarah J. Feakins, Naomi E. Levin, Hannah M. Liddy, Alexa Sieracki, Timothy I. Eglinton & Raymonde Bonnefille, *Northeast African vegetation change over 12 m.y.* Geology (2013), preprint, 1–4. DOI:10.1130/G33845.1.

Intense debate surrounds the evolution of grasses using the C4 (Hatch-Slack) photosynthesis pathway and the emergence of African grasslands, often assumed to be one and the same. Here, we bring new insights with the combination of plant leaf wax carbon isotopic composition (d13Cwax) and pollen data from marine sediments of the Gulf of Aden (northeast Africa), which show that C4 biomass increases were not necessarily associated with regional grassland expansion. We find broadly opposing trends toward more enriched d13Cwax values and decreased grass pollen proportions between 12 and 1.4 Ma. This apparently contradictory evidence can be reconciled if a greater proportion of the Late Miocene northeast African landscape were covered by C3 grasses than previously thought, such that C4 grasses and shrubs replaced a C3 ecosystem including trees and productive grasslands. In addition, d13Cwax and pollen both indicate that true rainforests were unlikely to have been extensive in northeast Africa at any time in the last 12 m.y., although seasonally dry forests were a significant component of the regional landscape since the Late Miocene. Here, we extend regionally integrative marine

archives of terrestrial vegetation back to 12 Ma, and we evaluate them in the context of an updated compilation of pedogenic carbonate d13C values from East African Rift strata. We identify two distinct phases of increasing C4 biomass between 11 and 9 Ma (with a reversal by 4.3 Ma) and then a re-expansion between 4.3 and 1.4 Ma; surprisingly, neither was associated with grassland expansion.

NEEM community 2013

NEEM community members, *Eemian interglacial reconstructed from a Greenland folded ice core*. nature **493** (2013), 489–494.
n493-0489-Supplement1.pdf, n493-0489-Supplement2.xls
Efforts to extract a Greenland ice core with a complete record of the Eemian interglacial (130,000 to 115,000 years ago) have until now been unsuccessful. The response of the Greenland ice sheet to the warmer-than-present climate of the Eemian has thus remained unclear. Here we present the new North Greenland Eemian Ice Drilling ('NEEM') ice core and show only a modest ice-sheet response to the strong warming in the early Eemian. We reconstructed the Eemian record from folded ice using globally homogeneous parameters known from dated Greenland and Antarctic ice-core records. On the basis of water stable isotopes, NEEM surface temperatures after the onset of the Eemian (126,000 years ago) peaked at 8±4 degrees Celsius above the mean of the past millennium, followed by a gradual cooling that was probably driven by the decreasing summer insolation. Between 128,000 and 122,000 years ago, the thickness of the northwest Greenland ice sheet decreased by 400±250 metres, reaching surface elevations 122,000 years ago of 130±300 metres lower than the present. Extensive surface melt occurred at the NEEM site during the Eemian, a phenomenon witnessed when melt layers formed again at NEEM during the exceptional heat of July 2012.With additional warming, surface melt might become more common in the future.
NEEM community members: D. Dahl-Jensen, M. R. Albert, A. Aldahan, N. Azuma, D. Balslev-Clausen, M. Baumgartner, A.-M. Berggren, M. Bigler, T. Binder, T. Blunier, J. C. Bourgeois, E. J. Brook, S. L. Buchardt, C. Buizert, E. Capron, J. Chappellaz, J. Chung, H. B. Clausen, I. Cvijanovic, S. M. Davies, P. Ditlevsen, O. Eicher, H. Fischer, D. A. Fisher, L. G. Fleet, G. Gfeller, V. Gkinis, S. Gogineni, K. Goto-Azuma, A. Grinsted, H. Gudlaugsdottir, M. Guillevic, S. B. Hansen, M. Hansson, M. Hirabayashi, S. Hong, S. D. Hur, P. Huybrechts, C. S. Hvidberg, Y. Iizuka, T. Jenk, S. J. Johnsen, T. R. Jones, J. Jouzel, N. B. Karlsson, K. Kawamura, K. Keegan, E. Kettner, S. Kipfstuhl, H. A. Kjær, M. Koutnik, T. Kuramoto, P. Köhler, T. Laepple, A. Landais, P. L. Langen, L. B. Larsen, D. Leuenberger, M. Leuenberger, C. Leuschen, J. Li, V. Lipenkov, P. Martinerie, O. J. Maselli, V. Masson-Delmotte, J. R. McConnell, H. Miller, O. Mini, A. Miyamoto, M. Montagnat-Rentier, R. Mulvaney, R. Muscheler, A. J. Orsi, J. Paden, C. Panton, F. Pattyn, J.-R. Petit, K. Pol, T. Popp, G. Possnert, F. Prié, M. Prokopiou, A. Quiquet, S. O. Rasmussen, D. Raynaud, J. Ren, C. Reutenauer, C. Ritz, T. Röckmann, J. L. Rosen, M. Rubino, O. Rybak, D. Samyn, C. J. Sapart, A. Schilt, A. M. Z. Schmidt, J. Schwander, S. Schü pbach, I. Seierstad, J. P. Severinghaus, S. Sheldon, S. B. Simonsen, J. Sjolte, A. M. Solgaard, T. Sowers, P. Sperlich, H. C. Steen-Larsen, K. Steffen, J. P. Steffensen, D. Steinhage, T. F. Stocker, C. Stowasser, A. S. Sturevik, W. T. Sturges, A. Sveinbjörnsdottir, A. Svensson, J.-L. Tison, J. Uetake, P. Vallelonga, R. S. W. van de Wal, G. van der Wel, B. H. Vaughn, B. Vinther, E. Waddington, A. Wegner, I. Weikusat, J. W. C. White, F. Wilhelms, M. Winstrup, E. Witrant, E. W. Wolff, C. Xiao and J. Zheng

Schiermeier 2013

Quirin Schiermeier, *Greenland defied ancient warming, but Antarctic*

glaciers may be more vulnerable than thought. nature **493** (2013), 459–460.

"The good news is that Greenland is not as sensitive to climate warming as we thought," says Dahl-Jensen. "The bad news is that if Greenland's ice sheet did not disappear during the Eemian, Antarctica must have been responsible for a significant part of the sea-level rise," she adds. These two ice sheets, the world's biggest, have been stable for most of the current interglacial period. But since temperatures began to soar a couple of decades ago, Greenland and Antarctica have been shedding ice fast.

Tung 2013

Ka-Kit Tung & Jiansong Zhou, *Using data to attribute episodes of warming and cooling in instrumental records.* PNAS **110** (2013), 2058–2063.

The observed global-warming rate has been nonuniform, and the cause of each episode of slowing in the expected warming rate is the subject of intense debate. To explain this, nonrecurrent events have commonly been invoked for each episode separately. After reviewing evidence in both the latest global data (HadCRUT4) and the longest instrumental record, Central England Temperature, a revised picture is emerging that gives a consistent attribution for each multidecadal episode of warming and cooling in recent history, and suggests that the anthropogenic global warming trends might have been overestimated by a factor of two in the second half of the 20th century. A recurrent multidecadal oscillation is found to extend to the preindustrial era in the 353-y Central England Temperature and is likely an internal variability related to the Atlantic Multidecadal Oscillation (AMO), possibly caused by the thermohaline circulation variability. The perspective of a long record helps in quantifying the contribution from internal variability, especially one with a period so long that it is often confused with secular trends in shorter records. Solar contribution is found to beminimal for the second half of the 20th century and less than 10 % for the first half. The underlying net anthropogenic warming rate in the industrial era is found to have been steady since 1910 at 0.07–0.08 °C/decade, with superimposed AMO-related ups and downs that included the early 20th century warming, the cooling of the 1960s and 1970s, the accelerated warming of the 1980s and 1990s, and the recent slowing of the warming rates. Quantitatively, the recurrent multidecadal internal variability, often underestimated in attribution studies, accounts for 40 % of the observed recent 50-y warming trend.

multidecadal variability | solar influence | Little Ice Age | Maunder Minimum

Mittelpaläolithikum

Ready 2013

Elspeth Ready, *Neandertal foraging during the late Mousterian in the Pyrenees: New insights based on faunal remains from Gatzarria Cave.* Journal of Archaeological Science **40** (2013), 1568–1578.

This article presents the initial results of a new study of faunal remains from Gatzarria Cave, a Middle-toUpper Palaeolithic transition site the Pyrenees of southwestern France (department of the Pyrénées Atlantiques). This study attempts to document diet breadth during the late Mousterian, while paying due attention to recently identified problems regarding the stratigraphic context of the assemblages. The faunal analysis focuses on a subset of late Mousterian faunal remains from layer Cj at the site. Taphonomic analysis suggests that humans were the primary bone accumulators. The assemblage is dominated by a single large-bodied species,

red deer; smaller-bodied ungulates are poorly represented. Skeletal part representation indicates that within-bone nutrients contained in marrow were probably a key resource for these foragers. The overall pattern of remains is interpreted as evidence of narrow-spectrum foraging, a pattern which appears to be repeated at other Mousterian sites in the Pyrenees region. This may mean that local Neandertal populations existed at relatively low densities. However, this suggestion must be tempered by the fact that settlement patterns, including occupation seasonalities and site functions, are not yet well understood for this region.
Keywords: Zooarchaeology | Subsistence | Foraging theory | Neandertals | Middle Palaeolithic | Pyrenees

Richter 2005

Jürgen Richter, *Hasty Foragers: The Crimea Island and Europe During the Last Interglacial*. In: Victor Chabai, Jürgen Richter & Thorsten Uthmeier (Hrsg.), *Kabazi II: Last Interglacial Occupation, Environment and Subsistence*, *Palaeolithic Sites of Crimea, Volume 1*. (Simferopol – Cologne 2005), 275–286.
The last interglacial or Eemian Interglacial, from 126.000 to 115.000 B.P., saw warm and humid climatic conditions in Europe similar to those of the present time, or even a lile more favourable (overview: Van Kolfschoten & Gibbard 2000). Thus, archaeological sites from the last interglacial offer the opportunity to observe the behaviour of Middle Palaeolithic humans under similar climatic conditions and in, potentially, comparable environments as they prevail today.

Neolithikum

Salque 2013

Mélanie Salque et al., *Earliest evidence for cheese making in the sixth millennium BC in northern Europe*. nature **493** (2013), 522–525.
n493-0522-Supplement1.pdf
Mélanie Salque, Peter I. Bogucki, Joanna Pyzel, Iwona Sobkowiak-Tabaka, Ryszard Grygiel, Marzena Szmyt & Richard P. Evershed
The introduction of dairying was a critical step in early agriculture, with milk products being rapidly adopted as a major component of the diets of prehistoric farmers and pottery-using late hunter-gatherers. The processing of milk, particularly the production of cheese, would have been a critical development because it not only allowed the preservation of milk products in a non-perishable and transportable form, but also it made milk a more digestible commodity for early prehistoric farmers. The finding of abundant milk residues in pottery vessels from seventh millennium sites from north-western Anatolia provided the earliest evidence of milk processing, although the exact practice could not be explicitly defined. Notably, the discovery of potsherds pierced with small holes appear at early Neolithic sites in temperate Europe in the sixth millennium BC and have been interpreted typologically as 'cheese-strainers', although a direct association with milk processing has not yet been demonstrated. Organic residues preserved in pottery vessels have provided direct evidence for early milk use in the Neolithic period in the Near East and south-eastern Europe, north Africa, Denmark and the British Isles, based on the d13C and D13C values of the major fatty acids in milk. Here we apply the same approach to investigate the function of sieves / strainer vessels, providing direct chemical evidence for their use in milk processing. The presence of abundant milk fat in these specialized vessels, comparable in form to modern cheese strainers, provides compelling evidence for the vessels having being used to

separate fat-rich milk curds from the lactose-containing whey. This new evidence emphasizes the importance of pottery vessels in processing dairy products, particularly in the manufacture of reduced-lactose milk products among lactose-intolerant prehistoric farming communities.

Story or Book

Baudach 2013

Arne Baudach, *Deutschland schafft Sarrazin ab*. Spektrum der Wissenschaft **2013**, i, 99–102.

Wissenschaftler verschiedener Fachrichtungen zerpflücken die Thesen des umstrittenen Autors.

Michael Haller, Martin Niggeschmidt (Hg.). Der Mythos vom Niedergang der Intelligenz. Von Galton bis Sarrazin: Die Denkmuster und Denkfehler der Eugenik. Springer VS, Wiesbaden 2012. 212 S., E 29,95

Borgerhoff Mulder 2013

Monique Borgerhoff Mulder, *Power of the past*. nature **493** (2013), 477–478.

Monique Borgerhoff Mulder assesses an exploration of how modern industrial and traditional societies differ.

The World Until Yesterday: What Can We Learn from Traditional Societies? Jared Diamond. Viking: 2012. 512 pp. $ 36

Many anthropologists will undoubtedly object to this us-versusthem framing, although for a popular readership it is clearly thought-provoking. Human diversity in social organization cannot be dichotomized as traditional versus modern. Diamond recognizes this in his preface, but thereafter chooses to ignore it.

The book brings anthropology alive for those who have never had the privilege of visiting, or reading deeply about, societies very different from their own. For those who have worked in the remote reaches of the world, it may tire or even annoy. Tire, because the book is long, and draws on overly familiar ethnographies; annoy, because the scale of comparison, us versus them, is conceptually limiting. Diamond has previously described his writings on the cultures of New Guinea as journalism. Perhaps this is how we should read The World Until Yesterday, as a highly personal reflection on the virtues and vices of modern industrial civilization.