Liste erstellt am 2011-11-17

Literatur

Afrika

Höhn 2007

Alexa Höhn, Stefanie Kahlheber, Katharina Neumann & Astrid Schweizer, *Settling the rain forest, The environment of farming communities in Southern Cameroon during the first millennium BC.* In: Jürgen Runge (Hrsg.), *Dynamics of forest ecosystems in Central Africa during the Holocene, Past – Present – Future.* Palaeoecology of Africa 28 (London 2007), 29–41.

In West and Central Africa important environmental and prehistoric changes took place in the first millennium BC. These are subjects of a research project involving geographers, archaeologists and archaeobotanists from the universities of Tübingen and Frankfurt. One of the main objectives is to investigate the environmental conditions under which farming and pottery-producing people settled in southern Cameroon in the first millennium BC. Archaeological excavations have been conducted at Bwambe-Sommet in the vicinity of Kribi at the Atlantic coast and at Akonetye, Minyin and Abang Minko'o close to Ambam, which is located 165 km to the southeast of Kribi. From the structures excavated a large body of archaeobotanical material was retrieved. In addition several pollen cores were taken, the one of Nyabessan in the Ntem Delta nearMa'an yielding material that included the time slice in question. The data analysed so far indicate that the settlements were situated within rain forest vegetation which, however, was disturbed and partly substituted by pioneer plant formations in the first millennium BC. Open formations existed in the vicinity of the settlements.

Aktuell

Aimers 2011

James Aimers & David Hodell, *Drought and the Maya, The story of the artefacts – Maya megadrought?* nature **479** (2011), 44–45.

The collapse of the Maya civilization is often attributed to drought, but is the explanation really as simple as that? On the basis of evidence from their respective fields, an archaeologist and a palaeoclimatologist call for a more nuanced assessment.
Most surprising of all, sites such as Lamanai and Tipu in Belize, and sites in the Petén Lakes region of Guatemala, were not abandoned until well into the historic period – as late as 1697 for Tayasal in the Petén Lakes district. Collapse may therefore not be the correct term to describe the variable, longterm process of Maya decline5, and some archaeologists suspect that climate scientists emphasize droughts that correlate with known abandonments, but ignore those that occurred in periods of growth. In fact, Mesoamerican civilizations in general experienced multiple periods of growth and decline – the Maya were far from singular in this respect.

Birch 2011

Kristi Birch, Carol Blackburn, Linda Brody & Patricia Wallace, *An Online Community for Students Who Love STEM.* science **334** (2011), 467–468.

The next generation of STEM innovators interacts with practicing scientists, mathematicians, and each other.

For students like Philip Streich, whom Discover magazine named one of the top five young scientists under age 20 in 2008 (1), the discussion forums found on Cogito were a lifeline. He wrote, "Living on a farm in rural Wisconsin, I'd had no opportunity to hear about and communicate with other kids my age who were as passionate as I was about science. Cogito brought me into a scientific community that I would otherwise never have had a chance to be part of . . . it motivated me to start doing research myself . . .

Callaway 2011

Ewen Callaway, *Report finds massive fraud at Dutch universities*. nature **479** (2011), 15.

Investigation claims dozens of social-psychology papers contain faked data.
Often, the report says, Stapel and a colleague or student came up with a hypothesis, and then designed an experiment to test it. Stapel took responsibility for collecting data through what he said was a network of contacts at other institutions, and several weeks later produced a fictitious data file for his colleague to write up into a paper. On other occasions, Stapel received co-authorship after producing data he claimed to have collected previously that exactly matched the needs of a colleague working on a particular study.
The data were also suspicious, the report says: effects were large; missing data and outliers were rare; and hypotheses were rarely refuted. Journals publishing Stapel's papers did not question the omission of details about where the data came from. "We see that the scientific checks and balances process has failed at several levels," Levelt says.

Fenton 2011

Norman Fenton, *Improve statistics in court*. nature **479** (2011), 36–37.

Experts must agree a set of acceptable ways to assess and present forensic evidence, says Norman Fenton.
Summary
– Statistical methods for weighing evidence are being blocked in recent court rulings
– Lawyers may be unwilling to quantify subjective evidence, preventing legal conclusions from being drawn
– The difficulty of presenting complex probability calculations hinders their widespread acceptance
– An international consortium of statisticians, lawyers and forensic scientists is drawing up guidelines for the use of statistics in court

Karpicke 2011

Jeffrey D. Karpicke & Janell R. Blunt, *Response to Comment on "Retrieval Practice Produces More Learning than Elaborative Studying with Concept Mapping"*. science **334** (2011), 453.

Mintzes et al. comment on our study in which we showed that retrieval practice enhances meaningful learning more than elaborative studying with concept mapping. Here, we consider and rebut claims that are based on mischaracterizations of our paper and speculations rather than evidence. We emphasize that randomized, controlled studies in both laboratory and classroom settings are essential to identifying effective strategies that promote meaningful learning.

Mintzes 2011

Joel J. Mintzes et al., *Comment on "Retrieval Practice ProducesMore Learning than Elaborative Studying with Concept Mapping"*. science **334** (2011), 453.

Joel J. Mintzes, Alberto Canas, John Coffey, James Gorman, Laine Gurley, Robert Hoffman, Saundra Y. McGuire, Norma Miller, Brian Moon, James Trifone, James H. Wandersee

Karpicke and Blunt (Reports, 11 February 2011, p. 772) reported that retrieval practice produces greater gains in learning than elaborative studying with concept mapping and concluded that this strategy is a powerful way to promote meaningful learning of complex concepts commonly found in science education. We question their findings on methodological and epistemological grounds.

Pickard 2011

Galen Pickard, Wei Pan, Iyad Rahwan, Manuel Cebrian, Riley Crane, Anmol Madan & Alex Pentland, *Time-Critical Social Mobilization*. science **334** (2011), 509–512.

s334-0509-Supplement.pdf

The World Wide Web is commonly seen as a platform that can harness the collective abilities of large numbers of people to accomplish tasks with unprecedented speed, accuracy, and scale. To explore the Web's ability for social mobilization, the Defense Advanced Research Projects Agency (DARPA) held the DARPA Network Challenge, in which competing teams were asked to locate 10 red weather balloons placed at locations around the continental United States. Using a recursive incentive mechanism that both spread information about the task and incentivized individuals to act, our team was able to find all 10 balloons in less than 9 hours, thus winning the Challenge. We analyzed the theoretical and practical properties of this mechanism and compared it with other approaches.

Roberts 2011

Dale C. Roberts, Vincenzo Marcelli, Joseph S. Gillen, John P. Carey, Charles C. Della Santina & David S. Zee, *MRI Magnetic Field Stimulates Rotational Sensors of the Brain*. Current Biology **21** (2011), 1635–1640.

Vertigo in and around magnetic resonance imaging (MRI) machines has been noted for years [1, 2]. Several mechanisms have been suggested to explain these sensations [3, 4], yet without direct, objective measures, the cause is unknown. We found that all of our healthy human subjects developed a robust nystagmus while simply lying in the static magnetic field of an MRI machine. Patients lacking labyrinthine function did not. We use the pattern of eye movements as a measure of vestibular stimulation to show that the stimulation is static (continuous, proportional to static magnetic field strength, requiring neither head movement nor dynamic change in magnetic field strength) and directional (sensitive to magnetic field polarity and head orientation). Our calculations and geometric model suggest that magnetic vestibular stimulation (MVS) derives from a Lorentz force resulting from interaction between the magnetic field and naturally occurring ionic currents in the labyrinthine endolymph fluid. This force pushes on the semicircular canal cupula, leading to nystagmus. We emphasize that the unique, dual role of endolymph in the delivery of both ionic current and fluid pressure, coupled with the cupula's function as a pressure sensor, makes magnetic-fieldinduced nystagmus and vertigo possible. Such effects could confound functional MRI studies of brain behavior, including resting-state brain activity.

Schiffer 2011

Michael Brian Schiffer, *Archaeology as Anthropology, Where did we go wrong?* SAA Archaeological Record **11** (2011), iv, 22–28.

Steptoe 2011

Andrew Steptoe & Jane Wardle, *Positive affect measured using ecological*

momentary assessment and survival in older men and women. PNAS **108** (2011), 18244–18248.
Links between positive affect (PA) and health have predominantly been investigated by using measures of recollected emotional states. Ecological momentary assessment is regarded as a more precise measure of experienced well-being. We analyzed data from the English Longitudinal Study of Aging, a representative cohort of older men and women living in England. PA was assessed by aggregating momentary assessments over a single day in 3,853 individuals aged 52 to 79 y who were followed up for an average of 5 y. Respondents in the lowest third of PA had a death rate of 7.3 %, compared with 4.6 % in the medium-PA group and 3.6 % in the high-PA group. Cox proportional-hazards regression showed a hazard ratio of 0.498 (95 % confidence interval, 0.345-0.721) in the high-PA compared with the low-PA group, adjusted for age and sex. This was attenuated to 0.646 (95 % confidence interval, 0.436-0.958) after controlling for demographic factors, negative affect, depressed mood, health indicators, and health behaviors. Negative affect and depressed mood were not related to survival after adjustment for covariates. These findings indicate that experienced PA, even over a single day, has a graded relationship with survival that is not caused by baseline health status or other covariates. Momentary PA may be causally related to survival, or may be a marker of underlying biological, behavioral, or temperamental factors, although reverse causality cannot be conclusively ruled out. The results endorse the value of assessing experienced affect, and the importance of evaluating interventions that promote happiness in older populations.
positive well-being | mortality | aging

Vermeesch 2011

P. Vermeesch, *Solitary wave behavior in sand dunes observed from space.* Geophysical Research Letters (2011) preprint, 1–12. DOI:10.1029/2011GL049610.
Although the dynamics of individual barchan dunes are well understood, their interactions are the subject of ongoing scientific interest and debate. Numerical and analog model predictions of shape-preserving binary dune collisions have been hard to test due to the long timescales over which such processes typically occur. This paper documents ten binary dune collisions in a 45-year time sequence of satellite images from the Bod'el'e Depression in Chad. The observations confirm that when two barchan dunes collide, a transfer of mass occurs so that one dune appears to travel through the other unscathed, like a solitary wave.

Vogel 2011

Gretchen Vogel, *Psychologist Accused of Fraud on 'Astonishing Scale'.* science **334** (2011), 579.
The fraud will cause "huge damage," says Susan Fiske, a social psychologist at Princeton University. "His work is very central-or was."
Stapel's studies encompassed a broad range of attentioncatching topics, including how a position of power influences moral thinking. The committee, which interviewed dozens of Stapel's former students and colleagues, concluded that Stapel acted alone. The report says he would discuss experimental designs in detail with collaborators and would claim to conduct the surveys at high schools and universities with which he had special arrangements. The experiments, however, never took place, and Stapel gave collaborators madeup data sets, investigators allege. In other instances, the report says, he told colleagues that he had an old data set lying around that he hadn't had a chance to analyze. When Stapel did conduct actual experiments, the committee found evidence that he manipulated results.
Many of Stapel's students were simply given data to analyze and graduated without having ever run an experiment, the report says. The commission writes that Stapel was

"absolute lord of the data" in his collaborations. Colleagues or students who asked to see raw data told the commission they were given excuses or even threatened and insulted.

Anthropologie

Buchen 2011

Lizzie Buchen, *When geeks meet*. nature **479** (2011), 25–27.

Psychologist Simon Baron-Cohen thinks scientists and engineers could be more likely to have a child with autism. Some researchers say the proof isn't there.

For now, the idea that technical brilliance requires a dash of autism seems to have taken root, at least in some tech and science hubs. It's a trend that, for Happe, provokes mixed feelings. "On the one hand, I'm glad that 'geek chic' has some kudos in our current society, because a lot of people with AS or ASD have a jolly tough and unpleasant life, and if people can recognize their talents a little more, I'm glad for that."

On the other hand, she says, "a large number of children with autism have significant intellectual disabilities and no speech. For their parents to be surrounded by people spotting all these famous people and saying they have autism, it must be absolutely infuriating."

Mottron 2011

Laurent Mottron, *The power of autism*. nature **479** (2011), 33–35.

Recent data – and personal experience – suggest that autism can be an advantage in some spheres, including science, says Laurent Mottron.

I no longer believe that intellectual disability is intrinsic to autism. To estimate the true rate, scientists should use only those tests that require no verbal explanation. In measuring the intelligence of a person with a hearing impairment, we wouldn't hesitate to eliminate components of the test that can't be explained using sign language; why shouldn't we do the same for autistics?

Of course, autism affects other functions, such as communication, social behaviour and motor abilities. These differences can render autistics more dependent on others, and make everyday life much more difficult. None of my arguments above is intended to minimize that.

Ramsden 2011

Sue Ramsden et al., *Verbal and non-verbal intelligence changes in the teenage brain*. nature **479** (2011), 113–113.

n479-0113-Supplement.pdf

Sue Ramsden, Fiona M. Richardson, Goulven Josse, Michael S. C. Thomas, Caroline Ellis, Clare Shakeshaft, Mohamed L. Seghier & Cathy J. Price

Intelligence quotient (IQ) is a standardized measure of human intellectual capacity that takes into account a wide range of cognitive skills1. IQ is generally considered to be stable across the lifespan, with scores at one time point used to predict educational achievement and employment prospects in later years1. Neuroimaging allows us to test whether unexpected longitudinal fluctuations in measured IQ are related to brain development. Here we show that verbal and non-verbal IQ can rise or fall in the teenage years, with these changes in performance validated by their close correlation with changes in local brain structure.A combination of structural and functional imaging showed that verbal IQ changed with grey matter in a region that was activated by speech, whereas non-verbal IQ changed with grey matter in a region that was activated by finger movements. By using longitudinal assessments of the same individuals, we obviated the many sources of variation in brain structure that confound cross-sectional studies. This allowed us to dissociate neural markers for the two types of IQ and to show that general verbal and

non-verbal abilities are closely linked to the sensorimotor skills involved in learning. More generally, our results emphasize the possibility that an individual's intellectual capacity relative to their peers can decrease or increase in the teenage years. This would be encouraging to those whose intellectual potential may improve, and would be a warning that early achievers may not maintain their potential.

Skoglund 2011

Pontus Skoglund & Mattias Jakobsson, *Archaic human ancestry in East Asia.* PNAS **108** (2011), 18301–18306.

Recent studies of ancient genomes have suggested that gene flow from archaic hominin groups to the ancestors of modern humans occurred on two separate occasions during the modern human expansion out of Africa. At the same time, decreasing levels of human genetic diversity have been found at increasing distance from Africa as a consequence of human expansion out of Africa. We analyzed the signal of archaic ancestry in modern human populations, and we investigated how serial founder models of human expansion affect the signal of archaic ancestry using simulations. For descendants of an archaic admixture event, we show that genetic drift coupled with ascertainment bias for common alleles can cause artificial but largely predictable differences in similarity to archaic genomes. In genotype data from non-Africans, this effect results in a biased genetic similarity to Neandertals with increasing distance from Africa. However, in addition to the previously reported gene flow between Neandertals and non-Africans as well as gene flow between an archaic human population from Siberia ("Denisovans") and Oceanians, we found a significant affinity between East Asians, particularly Southeast Asians, and the Denisovagenome-a pattern that is not expected under a model of solely Neandertal admixture in the ancestry of East Asians. These results suggest admixture between Denisovans or a Denisova-related population and the ancestors of East Asians, and that the history of anatomically modern and archaic humans might be more complex than previously proposed.

human origins | ancient DNA

Weintraub 2011

Karen Weintraub, *Autism counts.* nature **479** (2011), 22–24.

Shifting diagnoses and heightened awareness explain only part of the apparent rise in autism. Scientists are struggling to explain the rest.

Brugha says that the research needs to be repeated in different groups, but the implication is that autism prevalence is stable. "If this is confirmed in other studies, it means we should also be looking for causes of autism that have always been there, and not just for causes that have developed in recent years or decades," he says.

But many researchers now say that at least part of the rise in autism is real and caused by something in the environment. Rather than quibbling over recounts they are focusing on finding the causes.

Biologie

Callaway 2011

Ewen Callaway, *The Black Death Decoded.* nature **478** (2011), 444–446.

The genome of a 660-year-old bacterium is revealing secrets from one of Europe's darkest chapters.

This strain, Krause adds, probably emerged not long before the Black Death started its rampage across western Asia and Europe in the fourteenth century. "That, for me, was the biggest surprise," he says. It suggests, the authors argue, that earlier plagues were caused by either a now-extinct strain of Y. pestis or by an entirely different pathogen.

Mark Achtman, a plague-evolution expert at University College Cork in Ireland, calls this interpretation “absolute nonsense”. Krause and Poinar’s team did not consider a number of modern plague strains found in central and east Asia, which are thought to have earlier origins than the East Smithfield strain, Achtman says. Genome sequences for these strains were not available to his team, says Krause, but he is eager to see how they are related.

Holmes 2011

Edward C. Holmes, *Plague’s progress.* nature **478** (2011), 465–466.
The Black Death was one of the most devastating pandemics in human history. The first complete genome sequence of the causative Yersinia pestis bacterium provides a fresh perspective on plague evolution.

Datierung

Jiménez-Arenas 2011

Juan Manuel Jiménez-Arenas, Manuel Santonja, Miguel Botella & Paul Palmqvist, *The oldest handaxes in Europe: fact or artefact?* Journal of Archaeological Science **38** (2011), 3340–3349.
Hominin presence is well documented in a number of Early Pleistocene and early Middle Pleistocene European localities. However, the evidence currently available indicates that Acheulean handaxes spread in the fluvial basins of Western Europe during MIS 11, w400 kyr ago, associated with Homo heidelbergensis, although a number of early Middle Pleistocene Acheulean assemblages have been dated from MIS 16 onwards. For this reason, the magnetostratigraphic dating in Southeast Spain of two archaeological localities, the open-air site of Solana del Zamborino (SZ) and the rock-shelter site of Cueva Negra del Estrecho del Quípar (EQ), that put back the appearance of handaxes to the Early-Middle Pleistocene limit (Scott and Gibert, 2009) is of particular interest, as the new ages suggest that H. heidelbergensis was a contemporary of H. antecessor that had the ability to produce Levallois debitage and to control fire during the Early-Middle Pleistocene transition. However, we have detected a number of errors in the interpretation of the archaeological assemblage from the first site as well as striking discrepancies with the original faunal lists published for both localities, with several large mammal species that are omitted or arbitrarily changed to make the assemblages consistent with the new ages deduced from magnetostratigraphy. For this reason, we suggest that: (1) the finding of reverse polarity in the sediments sampled for paleomagnetism in SZ may simply record one of the polarity reversals that took place during the Brunhes Chron, although the use by Scott and Gibert (2009) of a composite stratigraphic column precludes correlating these levels with a specific reversal; and (2) the fauna and tools of EQ correspond to the late Middle Pleistocene sedimentary infillings of this karst site, while the samples taken for paleomagnetism belong to a previous sedimentary cycle during the Matuyama Chron. Such interpretations would be in better agreement with the age estimates provided by biostratigraphy and also with the currently accepted chronology for the appearance of Acheulean industries in Western Europe.
Keywords: Early Pleistocene | Acheulean handaxes | Paleomagnetism | Biostratigraphy | Southeast Spain

Grabung

Gostner 2011

Paul Gostner, Patrizia Pernter, Giampietro Bonatti, Angela Graefen &

Albert R. Zink, *New radiological insights into the life and death of the Tyrolean Iceman*. Journal of Archaeological Science **38** (2011), 3425–3431.
The radiological examinations carried out on the Tyrolean Iceman (5300 B.P.) in Bolzano between 2001 and 2006 have undergone a new, systematic re-appraisal, during which new findings have been added to those already known beforehand. Until now, it has been assumed that the Iceman's stomach was empty (due to the fact that this organ could not be localised), the colon contents constituting the Iceman's last meal. During this re-appraisal, however, the stomach could not only be exactly identified, but was also found to be well-filled, shedding new light on the scenario leading to his violent death. In addition, several other novel aspects were observed: three gallbladder stones were found which, in combination with the previously identified atherosclerosis, indicate that the Iceman's diet may have been richer in animal products than previous studies have suggested. The signs of enthesopathy in the knees indicate that he spent many hours wandering in the mountains. Several radio-opaque objects superficially embedded within the soft tissue were identified as being of taphonomic origin. The right humerus was found to be postmortally fractured.
Keywords: Stomach | Gallbladder stones | Vivianite | Cholelithiasis

Isotope

France 2011

Christine A. M. France, Jennifer A. Giaccai & Nadia Cano, *The effects of PVAc treatment and organic solvent removal on δ^{13}C, δ^{15}N, and δ^{18}O values of collagen and hydroxyapatite in a modern bone*. Journal of Archaeological Science **38** (2011), 3387–3393.
The stable isotopic analysis of archaeological and paleontological bones has become a common method to examine questions of ecology, climate, and physiology. As researchers addressing such questions incorporate museum collections in their studies, it is necessary to understand the isotopic effects of common preservation techniques utilized in such collections to ensure the preservation of original isotopic values. This study examines the effects of PVAc glue (polyvinyl acetate) applied in acetone solution and the subsequent removal of PVAc using various organic solvents on the d13C and d15N values of extracted bone collagen, the d13C and d18O values of carbonate in bone hydroxyapatite, and the d18O values of phosphate in hydroxyapatite. The data demonstrate that isotopic values in the collagen and phosphate are unaffected by any combination of PVAc treatment and solvent application. The carbonates show little variation in d13C values, but exhibit variable d18O values upon exposure to the PVAc solution. It is here suggested that d18O values from carbonates in PVAc-treated bones do not retain an original isotopic value and should not be included in future studies.
Keywords: Stable isotopes | Bone | Collagen | Hydroxyapatite | Polyvinyl acetate | PVAc

Jungpaläolithikum

Hartz 2010

Sönke Hartz, Thomas Terberger & Mikhail Zhilin, *New AMS-dates for the Upper Volga Mesolithic and the origin of microblade technology in Europe*, *Neue AMS-Daten zum Mesolithikum der oberen Wolga und das Aufkommen der Mikroklingentechnik in Europa*. Quartär **57** (2010), 155–169.
In the last 20 years several new peat bog sites have been detected in the Upper Volga area. The article presents a first series of AMS-dates for the Stanovoje 4 site. They assign the early Butovo Culture to the Preboreal and the middle Butovo Culture to the

Boreal. In the second part of the article some new evidence for microblade technology and composite tools in the late Palaeolithic/early Butovo Culture is discussed. It is well possible that the introduction of microblade technology and slotted bone tools in the late Boreal/early Atlantic period in the western Baltic was stimulated by contacts to eastern hunter-gatherers.
In den letzten 20 Jahren wurden im oberen Wolgagebiet zahlreiche neue steinzeitliche Feuchtbodenplätze entdeckt. Der Artikel behandelt eine erste Serie von AMS-Datierungen für den mehrphasigen mesolithischen Fundplatz Stanovoje 4. Die Daten stellen die Schicht der frühen Butovo-Kultur in das Präboreal und die Schicht der mittleren Butovo-Kultur in das Boreal. Stanavoje 4 kann damit als Referenzfundplatz für die frühholozäne Kulturentwicklung im oberen Wolgagebiet gelten. Besondere Aufmerksamkeit verdient das Auftreten von Mikroklingen und Kompositgeräten wie Knochendolchen mit Flinteinsätzen in der frühen Butovo-Kultur, die im Spätpaläolithikum der Region ihre Vorläufer finden. Die Autoren diskutieren die Verbreitung und weitere Entwicklung dieser Innovation. Es ist gut möglich, dass das Aufkommen von Mikroklingen und Flintschneidendolchen im Ostseegebiet im ausgehenden Boreal/frühen Atlantikum auf einen Technologietransfer aus dem östlichen Europa zurückgeht.
Mesolithic, Upper Volga, Butovo Culture, microblade technology, cultural contacts, transfer of technology, Mesolithikum, Obere Wolga, Butovo Kultur, Mikroklingen-Technologie, Kulturkontakt, Technologietransfer

Klima

Häkkinen 2011

Sirpa Häkkinen, Peter B. Rhines & Denise L. Worthen, *Atmospheric Blocking and Atlantic Multidecadal Ocean Variability*. science **334** (2011), 655–659.

s334-0655-Supplement.pdf

Atmospheric blocking over the northern North Atlantic, which involves isolation of large regions of air from the westerly circulation for 5 days or more, influences fundamentally the ocean circulation and upper ocean properties by affecting wind patterns. Winters with clusters of more frequent blocking between Greenland and western Europe correspond to a warmer, more saline subpolar ocean. The correspondence between blocked westerly winds and warm ocean holds in recent decadal episodes (especially 1996 to 2010). It also describes much longer time scale Atlantic multidecadal ocean variability (AMV), including the extreme pre-greenhouse-gas northern warming of the 1930s to 1960s. The space-time structure of the wind forcing associated with a blocked regime leads to weaker ocean gyres and weaker heat exchange, both of which contribute to the warm phase of AMV.

Woollings 2011

Tim Woollings, *Ocean Effects of Blocking*. science **334** (2011), 612–613.

Short-term weather events may drive ocean variability on time scales of several decades. Central to the new work is the concept of blocking, in which the usual prevailing westerly winds (see the figure, panel A) are obstructed by a large-scale, stationary system, usually an anticyclone (panel B); rainbearing cyclones are thereby diverted from their usual path, and regional impacts in temperature and precipitation can be severe, as in the Russian heat wave of 2010 (5). Blocking is a reversal of the usual pattern of cyclonic rotation of air masses north of the Atlantic jet and anticyclonic rotation to the south. Häkkinen et al. now propose that this reversal leads to a temporary change in the wind forcing that maintains the ocean's subpolar and subtropical gyre circulations. As a result of the changed wind forcing, the subpolar gyre contracts, opening up a pathway for warm

saline water from the subtropics to move to higher latitudes. This has a direct effect on the temperature of the subpolar gyre and may also lead to changes in the overturning circulation.

Kultur

Bshary 2011

Redouan Bshary & Nichola J. Raihani, *Toward an experimental exploration of the complexity of human social interactions*. PNAS **108** (2011), 18195–18196.

Models typically explore relatively simple scenarios to allow for analytical solutions. As a consequence, the models may fail to capture the full complexity of human cooperative interactions. To appreciate and understand the sophistication of human social behavior, it is therefore important to design experiments that go beyond the paths explored by theory. Such experiments, in turn, may provide inspiration for new models. Given the complexity and the novelty of the game, the results yield few answers and raise many questions for both empirical and theoretical future research.

Delêtre 2011

Marc Delêtre, Doyle B. McKey & Trevor R. Hodkinson, *Marriage exchanges, seed exchanges, and the dynamics of manioc diversity*. PNAS **108** (2011), 18249–18254.

pnas108-18249-Supplement.xls

The conservation of crop genetic resources requires understanding the different variables-cultural, social, and economic-that impinge on crop diversity. In small-scale farming systems, seed exchanges represent a key mechanism in the dynamics of crop genetic diversity, and analyzing the rules that structure social networks of seed exchange between farmer communities can help decipher patterns of crop genetic diversity. Using a combination of ethnobotanical and molecular genetic approaches, we investigated the relationships between regional patterns of manioc genetic diversity in Gabon and local networks of seed exchange. Spatially explicit Bayesian clustering methods showed that geographical discontinuities of manioc genetic diversity mirror major ethnolinguistic boundaries, with a southern matrilineal domain characterized by high levels of varietal diversity and a northern patrilineal domain characterized by low varietal diversity. Borrowing concepts from anthropology—kinship, bridewealth, and filiation—we analyzed the relationships between marriage exchanges and seed exchange networks in patrilineal and matrilineal societies. We demonstrate that, by defining marriage prohibitions, kinship systems structure social networks of exchange between farmer communities and influence the movement of seeds in metapopulations, shaping crop diversity at local and regional levels.

seed transmission | social reproduction | traditional economic systems

Rockenbach 2011

Bettina Rockenbach & Manfred Milinski, *To qualify as a social partner, humans hide severe punishment, although their observed cooperativeness is decisive*. PNAS **108** (2011), 18307–18312.

Conflicts of interest between the community and its members are at the core of human social dilemmas. If observed selfishness has future costs, individuals may hide selfish acts but display altruistic ones, and peers aim at identifying the most selfish persons to avoid them as future social partners. An interaction involving hiding and seeking information may be inevitable.We staged an experimental social-dilemma game in which actors could pay to conceal information about their contribution, giving, and punishing decisions

from an observer who selects her future social partners from the actors. The observer could pay to conceal her observation of the actors. We found sophisticated dynamic strategies on either side. Actors hide their severe punishment and low contributions but display high contributions. Observers select high contributors as social partners; remarkably, punishment behavior seems irrelevant for qualifying as a social partner. That actors nonetheless pay to conceal their severe punishment adds a further puzzle to the role of punishment in human social behavior. Competition between hiding and seeking information about social behavior may be even more relevant and elaborate in the real world but usually is hidden from our eyes.
cooperation | economic experiment | signaling

Mittelalter

Nürnberger 2002

Gernot Nürnberger, *Die Ausgrabungen in St. Ursula zu Köln*. Dissertation Rheinische Friedrich-Wilhelms-Universität (Bonn 2002). URN:nbn:de:hbz:5-00062.

Die Ursulakirche steht an dem Ort, an dem der Legende nach die heilige Ursula und ihre elftausend Gefährtinnen in frühchristlicher Zeit das Martyrium erlitten haben sollen. Seit 1942 wurde mehrfach in der Kirche archäologisch gegraben, und es traten Baureste zutage, die einen frühchristlichen Kirchenbau zu bestätigen schienen.
In der vorliegenden Dissertation werden die Grabungsergebnisse von 1942 bis 1998 vorgestellt und die Baureste neu interpretiert. In dem Zusammenhang ist auch die Entstehungsgeschichte der Ursulalegende erneut zu beleuchten, besonders da eine steinerne Inschriftentafel im Chorbereich (die sog. Clematiusinschrift) von der Erneuerung eines bereits bestehenden Kirchenbaus zeugt. An der Datierung der Inschrift scheiden sich die Meinungen der Gelehrten. Jedenfalls steht spätestens im 6. Jahrhundert an dem Ort eine Kirche mit einem kanzelartigen liturgischen Einbau (Ambo). Ungeklärt ist, ob der einschiffige Bau, der zuvor an gleicher Stelle stand, eine Kirche oder eine Art neutrale Aussegnungshalle für den umgebenden römischen Friedhof war.
Insgesamt sind mindestens fünf vorromanische Bauphasen festzustellen, von denen wenigstens drei im Zentrum einen charakteristischen liturgischen Einbau aufweisen. Der mindestens 26 Quadratmeter Fläche beanspruchende Einbau in der Bauphase des 10. Jahrhunderts diente wahrscheinlich bereits Zwecken der Heiligenverehrung und wurde von einem Einbau mit elf grabartigen Aussparungen abgelöst.

Neolithikum

Lacan 2011

Marie Lacan et al., *Ancient DNA suggests the leading role played by men in the Neolithic dissemination*. PNAS **108** (2011), 18255–18259.

Marie Lacan, Christine Keyser, François-Xavier Ricaut, Nicolas Brucato, Josep Tarrús, Angel Bosch, Jean Guilaine, Eric Crubézy, and Bertrand Ludes
The impact of the Neolithic dispersal on the western European populations is subject to continuing debate. To trace and date genetic lineages potentially brought during this transition and so understand the origin of the gene pool of current populations, we studied DNA extracted from human remains excavated in a Spanish funeral cave dating from the beginning of the fifth millennium B.C. Thanks to a “multimarkers” approach based on the analysis of mitochondrial and nuclear DNA (autosomes and Y-chromosome), we obtained information on the early Neolithic funeral practices and on the biogeographical origin of the inhumed individuals. No close kinship was detected. Maternal haplogroups found are consistent with pre-Neolithic settlement, whereas the Y-chromosomal

analyses permitted confirmation of the existence in Spain approximately 7,000 y ago of two haplogroups previously associated with the Neolithic transition: G2a and E1b1b1a1b. These results are highly consistent with those previously found in Neolithic individuals from French Late Neolithic individuals, indicating a surprising temporal genetic homogeneity in these groups. The high frequency of G2a in Neolithic samples in western Europe could suggest, furthermore, that the role of men during Neolithic dispersal could be greater than currently estimated.

Lemmen 2011

Carsten Lemmen, Detlef Gronenborn & Kai W. Wirtz, *A simulation of the Neolithic transition in Western Eurasia*. Journal of Archaeological Science **38** (2011), 3459–3470.

JArchSci38-3459-Supplement1.avi, JArchSci38-3459-Supplement2.pdf, JArchSci38-3459-Supplement3.nc.gz

Farming and herding were introduced to Europe from the Near East and Anatolia; there are, however, considerable arguments about the mechanisms of this transition. Were it the people who moved and either outplaced or admixed with the indigenous hunter-gatherer groups? Or was it material and information that moveddthe Neolithic Packagedconsisting of domesticated plants and animals and the knowledge of their use? The latter process is commonly referred to as cultural diffusion and the former as demic diffusion. Despite continuous and partly combined efforts by archaeologists, anthropologists, linguists, palaeontologists and geneticists, a final resolution of the debate has not yet been reached. In the present contribution we interpret results from the Global Land Use and technological Evolution Simulator (GLUES). This mathematical model simulates regional sociocultural development embedded in the geoenvironmental context during the Holocene. We demonstrate that the model is able to realistically hindcast the expansion speed and the inhomogeneous space-time evolution of the transition to agropastoralism in western Eurasia. In contrast to models that do not resolve endogenous sociocultural dynamics, our model describes and explains how and why the Neolithic advanced in stages.We uncouple the mechanisms of migration and information exchange and also of migration and the spread of agropastoralism. We find that (1) an indigenous form of agropastoralism could well have arisen in certain Mediterranean landscapes but not in northern and central Europe, where it depended on imported technology and material; (2) both demic diffusion by migration and cultural diffusion by trade may explain the western European transition equally well; (3) migrating farmers apparently contribute less than local adopters to the establishment of agropastoralism. Our study thus underlines the importance of adoption of introduced technologies and economies by resident foragers.

Keywords: Europe | Linearbandkeramik | Cultural diffusion | Demic diffusion | Agriculture | Adaptation | Migration | Modelling

Story or Book

Daly 2011

Martin Daly, *A farewell to arms*. nature **478** (2011), 453–454.

Martin Daly explores Steven Pinker's treatise on the taming of human aggression.

The Better Angels of Our Nature: Why Violence Has Declined/The Decline of Violence in History and Its Causes. Steven Pinker. Viking/Allen Lane: 2011. 832 pp. $40/£30

Pinker closes with a rousing defence of modernity. Ultimately, his explanation for the decline of violence is Elias's — that the synergistic impacts of Leviathan and gains from trade have created a civilizing process that has diminished the utility of violence and, hence, its appeal. But he elaborates on this with an engaging game-theoretical twist (the "Pacifist's Dilemma"), and more-up-to-date psychology than Elias would have been able

to muster. The Better Angels of Our Nature is a lively, fascinating read and a remarkable scholarly achievement that deserves to be studied and debated by many social scientists, concerned citizens and policy-makers.

Kupferschmidt 2011

Kai Kupferschmidt, *Sharp Insights and a Sharp Tongue*. science **334** (2011), 589–.

Brilliant but troubled, Robert Trivers made his mark dissecting the evolution of human relationships. In a new book, he tackles deceit and self-deception.

Robert Trivers: The Folly of Fools: The Logic of Deceit and Self-Deception in Human Life
Robert Trivers: Genes in Conflict, 2006

Trivers had figured out that the difference in parental investment is the most important difference between the sexes, one from which all else springs. While the human male contributes only a sperm that he can produce millions of, the female invests in a 9-month pregnancy producing a 3-kilogram baby. Naturally, Trivers argued, her strategy for choosing a partner had to be different from that of the male, leading to a difference in psychology. Females are pickier and focus on a male's genetic quality, status, and his willingness to invest in the offspring. Males compete for women and focus on physical evidence of fertility, among other attributes.

Having dissected friendship and love in quick succession, publishing key papers in 1971 and 1972, Trivers turned in 1974 to the relationship of parents and offspring. "There was all this nonsense at the time about parents teaching their children language and culture in a completely disinterested fashion and the child just being a vessel that they were filling," he scoffs. In fact, there was a battle for resources that started with the fetus growing in the mother's body. "Later, the mother wants to cut down on the milk so she can have her next offspring, but the child wants to keep suckling, so there is weaning conflict," he explains. Trivers termed this parent-offspring conflict. Trivers's theories on parent-offspring conflict have been spectacularly confirmed by the discovery of imprinted genes, like Igf2, in which just one copy of a gene is active, not the usual two (Science, 25 September 1998, p. 1984). The Igf2 protein makes the fetus in the womb grow faster. The mother inactivates the gene in the egg to rein in growth, trying to sequester some of her resources for future pregnancies. But the father's copy is still going strong, making the fetus grow as much as it can.

Scott 2011

R. B. Scott, *The Archaeology of Britain*. Journal of Archaeological Science **38** (2011), 3696–3697.

The Archaeology of Britain: An Introduction from Earliest Times to the Twenty-first Century, Edited John Hunter, Ian Ralston (Eds.), second ed. Routledge Taylor & Francis Group, London & New York (2009).

The book as a whole encourages readers to think and interpret the evidence for themselves, and to get involved with the material. Throughout the book, the reader is made to feel that the archaeology of Britain is accessible, whether to visit a site, or to support a local research group. This book is ideal as an introduction to the archaeology of Britain. It uses numerous clear examples from across the country, it highlights potential links and similarities with the continent, and it clearly outlines the current state of archaeological research in the UK. This book should be on all undergraduate reading lists, and should be recommended to interested amateurs.