Liste erstellt am 2011-12-15

Literatur

Aktuell

Cho 2011

Adrian Cho, *Where Does the Time Go?* science **334** (2011), 1200–1201.
One experiment sees neutrinos traveling faster than light. If the result can't be replicated, it may never be explained away

Crocker 2011

Jennifer Crocker & M. Lynne Cooper, *Addressing Scientific Fraud.* science **334** (2011), 1182.
Scientists generally trust that fabrication will be uncovered when other scientists cannot replicate (and therefore fail to validate) . ndings. In this particular case, however, reliance on replication as the first line of defense did not work. Why? Social psychologists, like other scientists, value novel contributions. Despite the need for reproducible results to drive progress, studies that replicate (or fail to replicate) others' findings are almost impossible to publish in top scientific journals. This disincentive means fraud can go undetected, which was the case with Stapel.
Although many social psychologists are reluctant to share their data, fearing that their analyses will be criticized or they will be scooped, increasing transparency in this way is important. The zeitgeist around replication must also change, because replication is the cornerstone of a cumulative science. Thus, the field of social psychology needs to develop policies that facilitate and encourage systematic replication. And in all of the sciences, discussing issues related to data replication should become part of student training, along with developing better systems for reporting suspected misconduct or fraud.

Wicherts 2011

Jelte M. Wicherts, *Psychology must learn a lesson from fraud case.* nature **480** (2011), 7.
Sharing data could help to avert scandals like the Diederik Stapel revelations, and improve the quality of research, says Jelte M. Wicherts.
The interim report of the investigating committee revealed that Stapel often refused to share his research data with colleagues, even co-authors on papers. To scientists in other fields, this may seem extraordinary; to psychologists it is sadly common practice.

Anthropologie

Burton-Chellew 2011

M. N. Burton-Chellew & R. I. M. Dunbar, *Are Affines Treated as Biological Kin? A Test of Hughes's Hypothesis.* Current Anthropology **52** (2011), 741–746.
Affines (or "in-laws") have long been recognized within anthropology as a special kind of kin. Evolutionary biology, in contrast, has typically treated affines as though they were unrelated: only direct genetic kinship counts. However, Hughes (1988) argued that Hamilton's concept of inclusive fitness naturally includes affinal kin as kin because true kin and their affines share genetic interests in future generations. We test this proposal by asking whether affinal relatives are treated more like biological kin or unrelated friends in

terms of perceived emotional closeness. We show for a sample of contemporary Belgians that affines are indeed treated more or less the same as biological kin of similar nominal relatedness and not at all like unrelated friends. These findings suggest that Hughes was right in his reinterpretation of Hamilton and that affinal kinship needs to be considered in biological studies of human kinship.

Moreau 2011

Claudia Moreau, Claude Bhérer, Hélène Vézina, Michèle Jomphe, Damian Labuda & Laurent Excoffier, *Deep Human Genealogies Reveal a Selective Advantage to Be on an Expanding Wave Front*. science **334** (2011), 1148–1150.

s334-1148-Supplement.pdf

Since their origin, human populations have colonized the whole planet, but the demographic processes governing range expansions are mostly unknown. We analyzed the genealogy of more than one million individuals resulting from a range expansion in Quebec between 1686 and 1960 and reconstructed the spatial dynamics of the expansion. We find that a majority of the present Saguenay Lac-Saint-Jean population can be traced back to ancestors having lived directly on or close to the wave front. Ancestors located on the front contributed significantly more to the current gene pool than those from the range core, likely due to a 20 % larger effective fertility of women on the wave front. This fitness component is heritable on the wave front and not in the core, implying that this life-history trait evolves during range expansions.

Navarrete 2011

Ana Navarrete, Carel P. van Schaik & Karin Isler, *Energetics and the evolution of human brain size*. nature **480** (2011), 91–93.

n480-0091-Supplement.pdf

The human brain stands out among mammals by being unusually large. The expensive-tissue hypothesis1 explains its evolution by proposing a trade-off between the size of the brain and that of the digestive tract, which is smaller than expected for a primate of our body size. Although this hypothesis is widely accepted, empirical support so far has been equivocal. Here we test it in a sample of 100 mammalian species, including 23 primates, by analysing brain size and organ mass data. We found that, controlling for fat-free body mass, brain size is not negatively correlated with the mass of the digestive tract or any other expensive organ, thus refuting the expensive-tissue hypothesis. Nonetheless, consistent with the existence of energy trade-offs with brain size, we find that the size of brains and adipose depots are negatively correlated in mammals, indicating that encephalization and fat storage are compensatory strategies to buffer against starvation. However, these two strategies can be combined if fat storage does not unduly hamper locomotor efficiency. We propose that human encephalization was made possible by a combination of stabilization of energy inputs and a redirection of energy from locomotion, growth and reproduction.

Nettle 2011

Daniel Nettle, Karthik Panchanathan, Tage Shakti Rai & Alan Page Fiske, *The Evolution of Giving, Sharing, and Lotteries*. Current Anthropology **52** (2011), 747–756.

CurrAnth52-747-Supplement.pdf

A core feature of human societies is that people often transfer resources to others. Such transfers can be governed by several different mechanisms, such as gift giving, communal sharing, or lottery-type arrangements. We present a simple model of the circumstances under which each of these three forms of transfer would be expected to evolve through

direct fitness benefits. We show that in general, individuals should favor transferring some of their resources to others when there is a fitness payoff to having social partners and/or where there are costs to keeping control of resources. Our model thus integrates models of cooperation through interdependence with tolerated theft models of sharing. We also show, by extending the HAWK-DOVE model of animal conflict, that communal sharing can be an adaptive strategy where returns to consumption are diminishing and lottery-type arrangements can be adaptive where returns to consumption are increasing. We relate these findings to the observed diversity in human resource-transfer processes and preferences and discuss limitations of the model.

Potts 2011

Richard Potts, *Big brains explained*. nature **480** (2011), 43–44.

The expensive-tissue hypothesis proposes that brain enlargement during human evolution was offset by a reduced gut size. The finding that the typical trade-off in mammals is between brain size and fat reserves suggests otherwise.

The authors' study admirably draws attention to several other factors relevant to brain expansion in Homo. The use of tools, cooking and advances in foraging technologies, for example, would have improved the food supply for Homo and so stabilized energy intake. Brain expansion was also helped by the development of behaviour such as giving resources to other individuals – a peculiar dimension of human social interactions that comes with expectations that adults will share and eat food together and cooperate in caring for the young. Such behaviour might have reduced the amount of energy expended by reproductive females and dependent offspring, thereby allowing an increase in brain size and birth rate, along with a slower pace of development for infants.

Tooby 1996

John Tooby & Leda Cosmides, *Friendship and the Banker's Paradox: Other pathways to the Evolution of Adaptations for Altruism*. In: W. G. Runciman, John Maynard Smith & R. I. M. Dunbar (Hrsg.), *Evolution of Social Behaviour Patterns in Primates and Man, A Joint Discussion Meeting of the Royal Society and the British Academy*. Proceedings of the British Academy 88 (Oxford 1996), 119–143.

The classical definition of altruism in evolutionary biology requires that an organism incur a fitness cost in the course of providing others with a fitness benefit. New insights are gained, however, by exploring the implications of an adaptationist version of the 'problem of altruism', as the existence of machinery designed to deliver benefits to others. Alternative pathways for the evolution of altruism are discussed, which avoid barriers thought to limit the emergence of reciprocation across species. We define the Banker's Paradox, and show how its solution can select for cognitive machinery designed to deliver benefits to others, even in the absence of traditional reciprocation. These models allow one to understand aspects of the design and social dynamics of human friendship that are otherwise mysterious.

Keywords: reciprocity; altruism; co-operation; social exchange; reciprocal altruism; evolutionary psychology.

Datierung

Weninger 2011

Bernhard Weninger, Kevan Edinborough, Lee Clare & Olaf Jöris, *Concepts of probability in radiocarbon analysis*. Documenta Praehistorica **38** (2011), 1–20.

In this paper we explore the meaning of the word probability, not in general terms, but restricted to the field of radiocarbon dating, where it has the meaning of 'dating probability assigned to calibrated 14C-ages'. The intention of our study is to improve our understanding of certain properties of radiocarbon dates, which – although mathematically abstract – are fundamental both for the construction of age models in prehistoric archaeology, as well as for an adequate interpretation of their reliability.
KEY WORDS – radiocarbon calibration; Bayesian inference; noncommutative algebra; noncommutative probability; chronology

Grabung

Mischka 2011

Doris Mischka, *The Neolithic burial sequence at Flintbek LA 3, north Germany, and its cart tracks: a precise chronology.* Antiquity **85** (2011), 742–758.

Antiquity085-0742-Supplement.pdf

Radiocarbon dating of 32 stratigraphic samples aided by Bayesian analysis has allowed the author to produce a high precision chronology for the construction and development of a continental Neolithic long barrow for the first time. She shows when and how quickly people living on the shore of the Baltic adopted pit graves, megalithic chambers and long barrows. Better than that, she provides a date for the famous cart tracks beneath the final barrow to 3420-3385 cal BC. Although other parts of the package – ploughing and pottery – are late arrivals, her analysis of the global evidence shows that Flintbek remains among the earliest sightings of the wheel in northern Europe.
Keywords: northern Europe, southern Scandinavia, Neolithic, Funnel Beaker culture, non-megalithic and megalithic graves, wheeled vehicles, chronology, radiocarbon, Bayesian method, monumental landscape

Jungpaläolithikum

O'Connor 2011

Sue O'Connor, Rintaro Ono & Chris Clarkson, *Pelagic Fishing at 42,000 Years Before the Present and the Maritime Skills of Modern Humans.* science **334** (2011), 1117–1121.

s334-1117-Supplement.pdf

By 50,000 years ago, it is clear that modern humans were capable of long-distance sea travel as they colonized Australia. However, evidence for advanced maritime skills, and for fishing in particular, is rare before the terminal Pleistocene/early Holocene. Here we report remains of a variety of pelagic and other fish species dating to 42,000 years before the present from Jerimalai shelter in East Timor, as well as the earliest definite evidence for fishhook manufacture in the world. Capturing pelagic fish such as tuna requires high levels of planning and complex maritime technology. The evidence implies that the inhabitants were fishing in the deep sea.

Klima

Kobashi 2011

Takuro Kobashi et al., *High variability of Greenland surface temperature over the past 4000 years estimated from trapped air in an ice core.* Geophysical Research Letters **38** (2011), L21501. DOI:10.1029/2011GL049444.

Takuro Kobashi, Kenji Kawamura, Jeffrey P. Severinghaus, Jean-Marc Barnola, Toshiyuki Nakaegawa, Bo M. Vinther, Sigfus J. Johnsen and Jason E. Box
Greenland recently incurred record high temperatures and ice loss by melting, adding to concerns that anthropogenic warming is impacting the Greenland ice sheet and in turn accelerating global sea-level rise. Yet, it remains imprecisely known for Greenland how much warming is caused by increasing atmospheric greenhouse gases versus natural variability. To address this need, we reconstruct Greenland surface snow temperature variability over the past 4000 years at the GISP2 site (near the Summit of the Greenland ice sheet; hereafter referred to as Greenland temperature) with a new method that utilises argon and nitrogen isotopic ratios from occluded air bubbles. The estimated average Greenland snow temperature over the past 4000 years was 30.7°C with a standard deviation of 1.0°C and exhibited a long-term decrease of roughly 1.5°C, which is consistent with earlier studies. The current decadal average surface temperature (2001–2010) at the GISP2 site is 29.9°C. The record indicates that warmer temperatures were the norm in the earlier part of the past 4000 years, including century-long intervals nearly 1°C warmer than the present decade (2001–2010). Therefore, we conclude that the current decadal mean temperature in Greenland has not exceeded the envelope of natural variability over the past 4000 years, a period that seems to include part of the Holocene Thermal Maximum. Notwithstanding this conclusion, climate models project that if anthropogenic greenhouse gas emissions continue, the Greenland temperature would exceed the natural variability of the past 4000 years sometime before the year 2100.

Weber 2011

Michael E. Weber, Peter U. Clark, Werner Ricken, Jerry X. Mitrovica, Steven W. Hostetler & Gerhard Kuhn, *Interhemispheric Ice-Sheet Synchronicity During the Last Glacial Maximum*. science **334** (2011), 1265–1269.
s334-1265-Supplement.pdf
The timing of the last maximum extent of the Antarctic ice sheets relative to those in the Northern Hemisphere remains poorly understood. We develop a chronology for the Weddell Sea sector of the East Antarctic Ice Sheet that, combined with ages from other Antarctic ice-sheet sectors, indicates that the advance to and retreat from their maximum extent was within dating uncertainties synchronous with most sectors of Northern Hemisphere ice sheets. Surface climate forcing of Antarctic mass balance would probably cause an opposite response, whereby a warming climate would increase accumulation but not surface melting. Our new data support teleconnections involving sea-level forcing from Northern Hemisphere ice sheets and changes in North Atlantic deep-water formation and attendant heat flux to Antarctic grounding lines to synchronize the hemispheric ice sheets.

Kultur

Lombard 2011

Marlize Lombard & Isabelle Parsons, *What happened to the human mind after the Howiesons Poort?* Antiquity **85** (2011), 1433–1443.
The authors deliver a decisive blow to the idea of unidirectional behavioural and cognitive evolution in this tightly argued account of why the bow and arrow was invented and then possibly laid aside by Middle Stone Age communities in southern Africa. Finding that all are modern humans (Homo sapiens), they paint a picture of diverse strategies for survival and development from 75 000 years ago onwards. It is one in which material inventions can come and go, human societies negotiating their own paths through a rugged mental landscape of opportunity.
Keywords: southern Africa, Stone Age,Howiesons Poort, evolution, projectiles, human mind

Neolithikum

Bickle 2011

Penny Bickle et al., *Roots of diversity in a Linearbandkeramik community: isotope evidence at Aiterhofen (Bavaria, Germany)*. Antiquity **85** (2011), 1243–1258.

Penny Bickle, Daniela Hofmann, R. Alexander Bentley, Robert Hedges, Julie Hamilton, Fernando Laiginhas, Geoff Nowell, D. Graham Pearson, Gisela Grupe & Alasdair Whittle The early Neolithic in northern Central Europe ought to be the theatre in which incoming farmersmeet local hunter-gatherers, with greater or lesser impact. By way of contrast, the authors use isotope analysis in a cemetery beside the Danube to describe a peaceful, well-integrated community with a common diet and largely indigenous inhabitants. Men and women may have had different mobility strategies, but the isotopes did not signal special origins or diverse foodproducing roles. Other explanations attend the variations in the burial rites of individuals and their distribution into cemetery plots. Keywords: Germany, Neolithic, LBK, isotope analysis, diversity, first farmers

Religion

Banning 2011

E. B. Banning, *So Fair a House, Göbekli Tepe and the Identification of Temples in the Pre-Pottery Neolithic of the Near East*. Current Anthropology **52** (2011), 619–660.

Archaeologists have proposed that quite a number of structures dating to the Pre-Pottery Neolithic A and B in southwest Asia were nondomestic ritual buildings, sometimes described specifically as temples or shrines, and these figure large in some interpretations of social change in the Near Eastern Neolithic. Yet the evidence supporting the identification of cult buildings is often equivocal or depends on ethnocentric distinctions between sacred and profane spaces. This paper explores the case of Göbekli Tepe, a large Pre-Pottery Neolithic site in Turkey that its excavator claims consisted only of temples, to illustrate weaknesses in some kinds of claims about Neolithic sacred spaces and to explore some of the problems of identifying prehistoric ritual. Consideration of the evidence suggests the alternative hypothesis that the buildings at Göbekli Tepe may actually be houses, albeit ones that are rich in symbolic content.