Liste erstellt am 2012-11-17

Literatur

Aktuell

Weinstock 2012

Joel V. Weinstock, *The worm returns*. nature **491** (2012), 183–185.

Joel V. Weinstock explains why several clinical trials are deliberately infecting people with helminths to treat autoimmune diseases.

Anthropologie

Kim 2012

Peter S. Kim, James E. Coxworth & Kristen Hawkes, *Increased longevity evolves from grandmothering*. Proc. Royal Society B **279** (2012), 4880–4884.

ProcRSocB279-4880-Supplement.pdf

Postmenopausal longevity may have evolved in our lineage when ancestral grandmothers subsidized their daughters' fertility by provisioning grandchildren, but the verbal hypothesis has lacked mathematical support until now. Here, we present a formal simulation in which life spans similar to those of modern chimpanzees lengthen into the modern human range as a consequence of grandmother effects. Greater longevity raises the chance of living through the fertile years but is opposed by costs that differ for the sexes. Our grandmother assumptions are restrictive. Only females who are no longer fertile themselves are eligible, and female fertility extends to age 45 years. Initially, there are very few eligible grandmothers and effects are small. Grandmothers can support only one dependent at a time and do not care selectively for their daughters' offspring. They must take the oldest juveniles still relying on mothers; and infants under the age of 2 years are never eligible for subsidy. Our model includes no assumptions about brains, learning or pair bonds. Grandmother effects alone are sufficient to propel the doubling of life spans in less than sixty thousand years.

Keywords: human evolution; life history; sexual conflict

Energie

Cottrell 1981

Alan Cottrell, *How safe is nuclear energy?* (London 1981).

Weinberg 1972

Alvin M. Weinberg, *Social Institutions and Nuclear Energy*. science **177** (1972), 27–34.

Let me close on a somewhat different note. The issues I have discussed here—reactor safety, waste disposal, transport of radioactive materials—are complex matters about which little can be said with absolute certainty. When we say that the probability of a serious reactor incident is perhaps 10^{-8} or even 10^{-4} per reactor per year, or that the failure of all safety rods simultaneously is incredible, we are speaking of matters that simply do not admit of the same order of scientific certainty as when we say it is incredible for heat to flow against a temperature gradient or for a perpetuum mobile to be built. As I have said earlier, these matters have trans-scientific elements. We claim to

be responsible technologists, and as responsible technologists we give as our judgment that these probabilities are extremely—almost vanishingly—small; but we can never represent these things as certainties. The society must then make the choice, and this is a choice that we nuclear people cannot dictate. We can only participate in making it. Is mankind prepared to exert the eternal vigilance needed to ensure proper and safe operation of its nuclear energy system? This admittedly is a significant commitment that we ask of society. What we offer in return, an all but infinite source of relatively cheap and clean energy, seems to me to be well worth the price.

Weinberg 1984

Alvin M. Weinberg & Irving Spiewak, *Inherently Safe Reactors and a Second Nuclear Era*. science **224** (1984), 1398–1402.

The Swedish PIUS reactor and the German-American small modular high-temperature gas-cooled reactor are inherently safe—that is, their safety relies not upon intervention of humans or of electromechanical devices but on immutable principles of physics and chemistry. A second nuclear era may require commercialization and deployment of such inherently safe reactors, even though existing lightwater reactors appear to be as safe as other well-accepted sources of central electricity, particularly hydroelectric dams.

Klima

Bouimetarhan 2012

Ilham Bouimetarhan, Matthias Prange, Enno Schefuß, Lydie Dupont, Jörg Lippold, Stefan Mulitza & Karin Zonneveld, *Sahel megadrought during Heinrich Stadial 1, Evidence for a three-phase evolution of the low- and mid-level West African wind system*. Quaternary Science Reviews **58** (2012), 66–76.

qsr58-0066-Supplement1.doc, qsr58-0066-Supplement2.xls, qsr58-0066-Supplement3.pdf

Millennial-scale dry events in the Northern Hemisphere monsoon regions during the last Glacial period are commonly attributed to southward shifts of the Intertropical Convergence Zone (ITCZ) associated with an intensification of the northeasterly (NE) trade wind system during intervals of reduced Atlantic meridional overturning circulation (AMOC). Through the use of high-resolution last deglaciation pollen records from the continental slope off Senegal, our data show that one of the longest and most extreme droughts in the western Sahel history, which occurred during the North Atlantic Heinrich Stadial 1 (HS1), displayed a succession of three major phases. These phases progressed from an interval of maximum pollen representation of Saharan elements between ≈19 and 17.4 kyr BP indicating the onset of aridity and intensified NE trade winds, followed by a millennial interlude of reduced input of Saharan pollen and increased input of Sahelian pollen, to a final phase between ≈16.2 and 15 kyr BP that was characterized by a second maximum of Saharan pollen abundances. This change in the pollen assemblage indicates a mid-HS1 interlude of NE trade wind relaxation, occurring between two distinct trade wind maxima, along with an intensified mid-tropospheric African Easterly Jet (AEJ) indicating a substantial change in West African atmospheric processes. The pollen data thus suggest that although the NE trades have weakened, the Sahel drought remained severe during this time interval. Therefore, a simple strengthening of trade winds and a southward shift of the West African monsoon trough alone cannot fully explain millennial-scale Sahel droughts during periods of AMOC weakening. Instead, we suggest that an intensification of the AEJ is needed to explain the persistence of the drought during HS1. Simulations with the Community Climate System Model indicate that an intensified AEJ during periods of reduced AMOC affected the North African climate by enhancing

moisture divergence over theWest African realm, thereby extending the Sahel drought for about 4000 years.
Keywords: Heinrich Stadial 1 | Sahel | Drought | Pollen | NE trade winds | African Easterly Jet | Mid-HS1 interlude

Zimov 2012
S. A. Zimov, N. S. Zimov, A. N. Tikhonov & F. S. Chapin III, *Mammoth steppe: a high-productivity phenomenon*. Quaternary Science Reviews **57** (2012), 26–45.
qsr57-0026-Supplement.kmz
At the last deglaciation Earth's largest biome, mammoth-steppe, vanished. Without knowledge of the productivity of this ecosystem, the evolution of man and the glacialeinterglacial dynamics of carbon storage in Earth's main carbon reservoirs cannot be fully understood. Analyzes of fossils 14C dates and reconstruction of mammoth steppe climatic envelope indicated that changing climate wasn't a reason for extinction of this ecosystem. We calculate, based on animal skeleton density in frozen soils of northern Siberia, that mammoth-steppe animal biomass and plant productivity, even in these coldest and driest of the planet's grasslands were close to those of an African savanna. Numerous herbivores maintained ecosystem productivity. By reducing soil moisture and permafrost temperature, accumulating carbon in soils, and increasing the regional albedo, mammoth-steppe amplified glacialeinterglacial climate variations. The re-establishment of grassland ecosystems would slow permafrost thawing and reduce the current warming rate. Proposed methods can be used to estimate animal density in other ecosystems.
Keywords: Mammoth ecosystem | Extinction | Productivity | Global change

Kupfer

Kienlin 2004
Tobias L. Kienlin, *Frühes Metall im nordalpinen Raum, Eine Untersuchung zu technologischen und kognitiven Aspekten früher Metallurgie anhand der Gefüge frühbronzezeitlicher Beile*. Archäologische Informationen **27** (2004), 187–194.

Kienlin 2005
Tobias L. Kienlin, *Frühbronzezeitliche Vollgriffdolche und Randleistenbeile, Zu Herstellungstechnik, Zusammensetzung und Materialwahrnehmung*. Archäologisches Korrespondenzblatt **35** (2005), 175–190.
Early bronze age metal hilted daggers and flanged axes: production techniques, composition and recognition of materials
The recent analysis of Early Bronze Age metal hilted daggers by S. Schwenzer (2004) has improved our knowledge substantially. To understand the development of early metallurgy, metal analyses are of great importance; in this way Schwenzer has proved that a refined handling of the alloying constituent tin took place. However, his research on the reasons for using tin bronze is influenced by the wish to show that bronze metal hilted daggers came from Italy or the Alpine region. It also makes assumptions about the properties of the copper types and alloys which have to be examined in greater detail. A metallographical analysis of Early Bronze Age flanged axes from the area north of the Alps has been undertaken to investigate the use of various copper types and tin bronze. This analysis of flanged axes – supported by experimental archaeology – provides significant clues about the recognition and choice of material which also have some significance for the production of metal hilted daggers.

Mit der Neubearbeitung der frühbronzezeitlichen Vollgriffdolche durch St. Schwenzer (2004) hat deren Kenntnis wichtige Fortschritte erfahren. Für die Frage nach dem Entwicklungsstand der frühen Metallurgie sind dabei vor allem die Metallanalysen von Interesse, anhand derer Schwenzer einen differenzierten Umgang mit dem Legierungselement Zinn nachweisen kann. Seine Ausführungen zu den Gründen der Verwendung der Zinnbronze sind jedoch von dem Anliegen beeinflusst, die Vollgriffdolche aus dem italischen oder alpinen Raum abzuleiten. Sie gehen zugleich einher mit Annahmen zu den Materialeigenschaften der in Frage stehenden Kupfersorten bzw. -legierungen, die einer eingehenderen Betrachtung bedürfen. Ausgehend von einer metallographischen Untersuchung früh-bronzezeitlicher Randleistenbeile des nordalpinen Raums soll der Verwendung unterschiedlicher Kupfersorten und der Zinnbronze in der Frühbronzezeit nachgegangen werden. Aus der Zusammenschau mit experimentellen Arbeiten ergeben sich dabei Anhaltspunkte über die Materialwahrnehmung und -auswahl auch bei der Herstellung der Vollgriffdolche.

Kupferinstitut 2004
Deutsches Kupferinstitut, *Kupfer-Zinn- und Kupfer-Zinn-Zink-Gusslegierungen (Zinnbronzen)*. (Düsseldorf 2004). <http://www.kupfer-institut.de/front_frame/pdf/Infodruck\protect\relax\kern.16667em%20i.\protect\relax\kern.16667em%2025_12_2004.pdf> (2012-11-10).

Kupferinstitut 2004
Deutsches Kupferinstitut, *Bronze – unverzichtbarer Werkstoff der Moderne*. (Düsseldorf 2004). <http://www.kupfer-institut.de/front_frame/pdf/Bronze_040122_screen.pdf> (2012-11-10).

Kupferinstitut 2004
Deutsches Kupferinstitut, *Kupfer-Zinn-Knetlegierungen (Zinnbronzen)*. (Düsseldorf 2004). <http://www.kupfer-institut.de/front_frame/pdf/i15_2004.pdf> (2012-11-10).

Metallzeiten

Cramer 1995
Clayton E. Cramer, *What Caused The Iron Age? unveröffentlichter Seminarvortrag, December 10, 1995*. (Sonoma 1995). <http://www.claytoncramer.com/unpublished/Iron2.pdf> (2012-11-17).
Whether the underlying cause was a tin shortage, or a copper shortage, it is easy to understand why Eastern Mediterranean societies first turned to iron as a cheaper, less effective alternative to bronze. After the discovery of carburization and quenching, steel was both cheaper and more effective than bronze.
Egypt had its own sources of copper ore in the Sinai, but still bought heavily from Cyprus. While tin ore deposits are now mined in the Eastern Desert of Egypt, "it is doubtful whether these deposits were known or worked in antiquity." Nonetheless, because of Egypt's much more southerly location relative to the other Eastern Mediterranean nations, the tin exports from Iran to the Eastern Mediterranean disrupted by invasion around 1200 BC might have continued to Egypt without interference. With adequate supplies of bronze, Egypt would have had much less reason to experiment with the inferior metal iron — and thus, less opportunity to discover steel.
In seeking explanations for technological change, it is tempting to see such change as the logical expression of chance discovery. Perhaps this is a seductive idea to twentieth

century people because so many of the significant discoveries of modern times were lucky accidents: penicillin, nitroglycerin, and X-rays, to name a few. But modern Western society encourages and rewards innovation, and most people regard innovation as a generally positive influence on their lives. Modern Western society accepts that the only constant is change. It is no surprise that twentieth century man assumed, until recently, that a chance technological discovery was the proximate cause of the Iron Age.
Throughout most of human history, societies have changed very slowly, regarding change with suspicion. Such societies would have taken the dramatic change from bronze to iron only under the most pressing need. From the available evidence, this pressing need was a critical bronze shortage. A sudden disruption of the political structures that made possible long-range trade in tin apparently induced this shortage.

Neolithikum

Lewthwaite 1986

James Lewthwaite, *The transition to food production, A Mediterranean perspective.* In: Marek Zvelebil (Hrsg.), *Hunters in Transition, Mesolithic societies of temperate Eurasia and their transition to farming.* New directions in archaeology (Cambridge 1986), 53–66.
Modem research has confirmed V. G. Childe's proposition that the rate of growth of mesolithic population and the processual rate of the transition to food production differed between the eastern and western basins of the Mediterranean: in effect, the very success of the western Mesolithic appears to have significantly delayed the adoption of crop cultivation and animal husbandry. This regional variation is the product of three major variables: the productivity, diversity and stability of the environment; the tolerance levels of the food-production system affecting its capacity to penetrate vacant niches; finally the effects of natural, theoretical and methodological biases favouring the survival, identification, excavation and analysis of different classes of sites. The critical role of islands as 'filters' of the transmission of food production from one mainland region to another receives particular attention.

Zvelebil 1986

Marek Zvelebil (Hrsg.), *Hunters in Transition, Mesolithic societies of temperate Eurasia and their transition to farming.* New directions in archaeology (Cambridge 1986).