Literatur

Afrika

De Maret 2002

De Maret 2003

Aktuell

Czakó 2011

The reaction of the chlorine atom with methane has been the focus of numerous studies that aim to test, extend, and/or modify our understanding of mode-selective reactivity in polyatomic systems. To this point, theory has largely been unable to provide accurate results in comparison with experiments. Here, we report an accurate global potential energy surface for this reaction. Quasi-classical trajectory calculations using this surface achieve excellent agreement with experiment on the rotational distributions of the hydrogen chloride (HCl) product. For the Cl + CHD3 ≈ HCl + CD3 reaction at low collision energies, we confirm the unexpected experimental finding that CH-stretch excitation is no more effective in activating this late-barrier reaction than is the translational energy, which is in contradiction to expectations based on results for many atom-diatom reactions.

Delton 2011

McNally 2011
Nauenberg 2011
Reis et al. (Reports, 26 November 2010, p. 1231) reported on the mechanism by which cats lap and gave a theoretical and experimental analysis of their observations. Their explanation for the cat’s lapping frequency, however, is based on an incorrect application of the principles of fluid dynamics. The revised analysis given here agrees with their observations and predicts a similar lapping frequency for cats and dogs.

Pinker 2011
Steven Pinker, Taming the devil within us. nature 478 (2011), 309–311.
We are getting smarter, and as a result the world is becoming a more peaceful place, says Steven Pinker.
The historical decline of violence (see ‘Murder’s downfall’) is a challenging scientific puzzle for anyone interested in human nature. Violence is not just a cultural fad that is falling out of fashion, like bustles and spats. Aggressive behaviour is found throughout the history and prehistory of our species, and shows no signs of having been invented in one place and spread to the others. The human brain has conserved mammalian circuits for rage and dominance, and boys universally play-fight. A majority of adults have homicidal fantasies and enjoy violent entertainment, and variation in violent tendencies across individuals is substantially heritable.
At the same time, not a single category of violence has stayed at a fixed level over the course of history. Whatever causes violence, it is not a perennial urge like hunger, sex or sleep.

Podobnik 2011
Because financial crises are characterized by dangerous rare events that occur more frequently than those predicted by models with finite variances, we investigate the underlying stochastic process generating these events. In the 1960s Mandelbrot and Fama proposed a symmetric Lévy probability distribution function (PDF) to describe the stochastic properties of commodity changes and price changes. We find that an asymmetric Lévy PDF, L, characterized by infinite variance, models several multiple credit ratios used in financial accounting to quantify a firm’s financial health, such as the Altman Z score and the Zmijewski score, and models changes of individual financial ratios, ΔXi. We thus find that Lévy PDFs describe both the static and dynamics of credit ratings. We find that for the majority of ratios, ΔXi scales with the Lévy parameter α≈1, even though only a few of the individual ratios are characterized by a PDF with power-law tails Xi−α with infinite variance. We also find that α exhibits a striking stability over time. A key element in estimating credit losses is the distribution of credit rating changes, the functional form of which is unknown for alphabetical ratings. For continuous credit ratings, the Altman Z score, we find that P(ΔZ) follows a Lévy PDF with power-law exponent α≈1, consistent with changes of individual financial ratios. Estimating the conditional P(ΔZ|Z) versus Z, we demonstrate how this continuous credit rating approach and its dynamics can be used to evaluate credit risk.

Stocker 2011
Roman Stocker, Jeffrey M. Aristoff, Sunghwan Jung & Pedro M. Reis,
Response to Comment on “How Cats Lap: Water Uptake by Felis catus”.

We return to the physics of cat lapping to show that our proposed scaling analysis predicts the functional dependencies revealed by the experimental data more accurately than a recently proposed alternative description by Nauenberg. Experimental verification of functional dependencies, rather than single numerical values, represents the appropriate test for any scaling argument.

Amerika

Lawler 2011

Andrew Lawler, Pre-Clovis Mastodon Hunters Make a Point. science 334 (2011), 302.

Haynes adds that the oldest Clovis sites are “only” 8 centuries younger than Manis. Thus the rib “may actually indicate the earliest beginning of the Clovis era, or an immediately proto-Clovis stage of human dispersal,” he says. “Proto-Clovis” peoples in small numbers may have filtered south from Beringia as early as 14,000 years ago, he says, although their impact was negligible until the arrival of Clovis technology. To Waters, such talk of “proto-Clovis” amounts to “grasping at straws.”

Waters 2011


The tip of a projectile point made of mastodon bone is embedded in a rib of a single disarticulated mastodon at the Manis site in the state of Washington. Radiocarbon dating and DNA analysis show that the rib is associated with the other remains and dates to 13,800 years ago. Thus, osseous projectile points, common to the Beringian Upper Paleolithic and Clovis, were made and used during pre-Clovis times in North America. The Manis site, combined with evidence of mammoth hunting at sites in Wisconsin, provides evidence that people were hunting proboscideans at least two millennia before Clovis.

Biologie

Metcalfe 2011


The causes of megafaunal extinctions in North America have been widely debated but remain poorly understood. Mammoths (Mammuthus spp.) in the American Southwest were hunted by Clovis people during a period of rapid climate change, just before the regional onset of Younger Dryas cooling and mammoth extirpation. Thus, these mammoths may provide key insights into late Pleistocene extinction processes. Here we reconstruct the seasonal diet and climatic conditions experienced by mammoths in the San Pedro Valley of Arizona, using the carbon (13C/12C) and oxygen (18O/16O) isotope compositions of tooth enamel. These records suggest that Clovis mammoths experienced a warm, dry
climate with sufficient summer rainfall to support seasonal C4 plant growth. Monsoon intensity may have been reduced relative to the preceding time period, but there is no isotopic evidence for severe drought. However, it is possible that the “Clovis drought”, inferred from stratigraphic evidence, occurred suddenly at the end of the animals’ lives and thus was not recorded in the enamel isotopic compositions. Unlike mammoths that lived before the Last Glacial Maximum, Clovis mammoths regularly increased C4 grass consumption during summer, probably seeking seasonally green grasslands farther from the river valley. This predictable seasonal behavior may have made mammoths easier to locate by Clovis hunters. Furthermore, Clovis mammoths probably had no previous experience of such sudden climatic change as is believed to have occurred at the time of their extinction.

geochemistry | stable isotopes | bioapatite | paleoclimate | Paleoindian

Grundlagen

Sarkar 2011
By an interesting coincidence the village of Gilund in Rajasthan, north-west India was host to an important Chalcolithic settlement of the early third millennium BC and to some of the last indigenous potters still working in the twenty-first century AD. The author shows how her study of the prehistoric potters was enhanced by what she learnt from their modern successors, pointing out that she was only just in time. These potters will be the last to practice and in this respect ethnoarchaeology is itself under threat.
Keywords: India, Rajasthan, Chalcolithic, third millennium BC, ceramics, pottery, ethnoarchaeology

Klima

Barker 2011
Stephen Barker et al., 800,000 Years of Abrupt Climate Variability. science 334 (2011), 347–351.
s334-0347-Supplement1.pdf, s334-0347-Supplement2.zip
We constructed an 800,000-year synthetic record of Greenland climate variability based on the thermal bipolar seesaw model. Our Greenland analog reproduces much of the variability seen in the Greenland ice cores over the past 100,000 years. The synthetic record shows strong similarity with the absolutely dated speleothem record from China, allowing us to place ice core records within an absolute timeframe for the past 400,000 years. Hence, it provides both a stratigraphic reference and a conceptual basis for assessing the long-term evolution of millennial-scale variability and its potential role in climate change at longer time scales. Indeed, we provide evidence for a ubiquitous association between bipolar seesaw oscillations and glacial terminations throughout the Middle to Late Pleistocene.

Wang 2011
GeoResLet38-L19702-Supplement.zip
The 2010 Atlantic hurricane season was extremely active, but no hurricanes made landfall in the United States, raising a question of what dictated the hurricane track. Here we use observations from 1970-2010 (also extending back to 1950) and numerical model experiments to show that the Atlantic warm pool (AWP) – a large body of warm water comprised of the Gulf of Mexico, the Caribbean Sea and the western tropical North Atlantic – plays an important role in the hurricane track. An eastward expansion of the AWP shifts the hurricane genesis location eastward, decreasing the possibility for a hurricane to make landfall. A large AWP also induces barotropic stationary wave patterns that weaken the North Atlantic subtropical high and produce the eastward steering flow anomalies along the eastern seaboard of the United States. Due to these two mechanisms, hurricanes are steered toward the northeast without making landfall in the United States. Although the La Niña event in the Pacific may be associated with the increased number of Atlantic hurricanes, its relationship with landfalling activity has been offset in 2010 by the effect of the extremely large AWP.

Kultur

Attar 2011
So it seems that the transcriptome is how hemp got high – or maybe how marijuana came ‘down’. Either way, it is clear that without complementing a genome with functional information, such as the transcriptome, the true meaning of a DNA sequence will largely remain unknown.

van Bakel 2011
Background: Cannabis sativa has been cultivated throughout human history as a source of fiber, oil and food, and for its medicinal and intoxicating properties. Selective breeding has produced cannabis plants for specific uses, including high-potency marijuana strains and hemp cultivars for fiber and seed production. The molecular biology underlying cannabinoid biosynthesis and other traits of interest is largely unexplored.
Results: We sequenced genomic DNA and RNA from the marijuana strain Purple Kush using shortread approaches. We report a draft haploid genome sequence of 534 Mb and a transcriptome of 30,000 genes. Comparison of the transcriptome of Purple Kush with that of the hemp cultivar ‘Finola’ revealed that many genes encoding proteins involved in cannabinoid and precursor pathways are more highly expressed in Purple Kush than in ‘Finola’. The exclusive occurrence of D9-tetrahydrocannabinolic acid synthase in the Purple Kush transcriptome, and its replacement by cannabidiolic acid synthase in ‘Finola’, may explain why the psychoactive cannabinoid D9-tetrahydrocannabinol (THC) is produced in marijuana but not in hemp. Resequencing the hemp cultivars ‘Finola’ and ‘USO-31’ showed little difference in gene copy numbers of cannabinoid pathway enzymes. However, single nucleotide variant analysis uncovered a relatively high level of variation among four cannabis types, and supported a separation of marijuana and hemp.
Conclusions: The availability of the Cannabis sativa genome enables the study of a multifunctional plant that occupies a unique role in human culture. Its availability will aid the development of therapeutic marijuana strains with tailored cannabinoid profiles and provide a basis for the breeding of hemp with improved agronomic characteristics. Keywords: Cannabaceae, cannabis, marijuana, hemp, genome, transcriptome, cannabinoid.
Knappett 2011
What was the effect on Late Minoan civilisation of the catastrophic destruction of Akrotiri on Thera (Santorini) by volcanic eruption? Not much, according to the evidence for continuing prosperity on Crete. But the authors mobilise their ingenious mathematical model (published in Antiquity 82: 1009-1024), this time to show that the effects of removing a major port of call could have impacted after an interval, as increased costs of transport gradually led to ever fewer routes and eventual economic collapse.
Keywords: Aegean, Minoan, Crete, Thera, Santorini, Akrotiri, Bronze Age, maritime communications, network analysis

Thomas 2011
Examining the earliest grand mortuary monuments of the Neolithic, the authors question the assumption that they mark the resting place of society's higher ranks. Using the skeletal remains, the grave goods and the burial rites, they find no great differences in commemoration between the monumental cemeteries, with their long barrows, and the flat graves, without structures. In this analysis, the children proved to be the most vivid players: while the very young are largely excluded, some toddlers were selected to carry hunting equipment, a distinction shared with selected adult males. Some children were also laid to rest in the long barrows, with some adults. Thus hunting has a spiritual value for these agriculturalists, and whether inherited or marked at birth, the children signal something more variable and subtle than linear rank.
Keywords: France, Middle Neolithic, fifth millennium BC, Cerny culture, long barrows, demography, burial rite, children, social structure

Mittelalter

Dietmar 2002
Carl Dietmar & Werner Jung, Kleine illustrierte Geschichte der Stadt Köln. (Köln 92002).

Fuchs 1999

Gregor 593a

Gregor 593b
Gregor von Tours, Zehn Bücher Geschichten, Band 2: Buch 6–10. Ausgewählte Quellen zur deutschen Geschichte des Mittelalters 3 (Darmstadt 1956).
Mannheim 1996  

Merowinger 2001  

Steuer 1980  

Weidemann 1982  

Neolithikum

Bogucki 1984  

Fragments of ceramic sieves constitute a widespread, but little-known element in the ceramic inventories of Linear Pottery sites in temperate Europe. These sieves appear to have functioned as strainers for separating curds from whey in cheese production, on the basis of parallels with later archaeological cultures and ethnographic examples. Archaeozoological data support the hypothesis that dairy production has a greater antiquity than has been hitherto accepted. The sieves played an important role in early dairy production, for the manufacture of cheese was an essential step in the exploitation of milk by populations who possibly had a high level of lactose intolerance.

Bogucki 1986  

The presence of ceramic sieves on a number of Linear Pottery sites argues that the milking of domestic cattle was practiced by the Early Neolithic peoples of temperate Europe around 4500 B.C. (5400 B.C.). When these data are combined with the zoo-archaeological evidence from Linear Pottery sites, it appears that a system of dairy husbandry developed in Neolithic temperate Europe to supplement the cereal cultivation which formed the mainstay of the subsistence system. Such a diversified economy would have been crucial to the successful establishment of agrarian communities in the forests of temperate Europe. In some areas, such as the lowlands of the North European Plain, dairy husbandry appears to have been the predominant subsistence practice during this period.

The recognition of such an antiquity for dairy production in temperate Europe does not contradict the notion that towards the end of the Neolithic there was a shift towards the maximum utilization of animal resources that Sherratt has termed the “Secondary Products Revolution” (1981, 1983). At this time, particularly in eastern Europe, subsistence systems appear to have emerged which had a primary emphasis on animal husbandry. Legge notes that although any economy which includes cattle will have access to both meat and milk, the exploitation of one or the other will be most efficient if it is developed in a specialized way, as appears to have been the case in this area during the Late...
Neolithic and Early Bronze Age (1981a:89). The roots of these systems, however, lie several millennia earlier, during the colonization of temperate Europe by the Linear Pottery culture.

**Bogucki 1993**


Most archaeological interest in the story of European social evolution has looked to the grand picture, as the bands combine and climb at last to achieve states and empires. What about the structure of European Neolithic as it was experienced at home, when the ox, the pig, the sheep and the goat came to live in the domestic unit of the single household?

**Craig 2011**

Oliver E. Craig et al., *Ancient lipids reveal continuity in culinary practices across the transition to agriculture in Northern Europe.* PNAS 108 (2011), 17910–17915.

Oliver E. Craig, Val J. Steele, Anders Fischer, Sönke Hartz, Søren H. Andersen, Paul Donohoe, Aikaterini Glykou, Hayley Saul, D. Martin Jones, Eva Koch and Carl P. Heron

Farming transformed societies globally. Yet, despite more than a century of research, there is little consensus on the speed or completeness of this fundamental change and, consequently, on its principal drivers. For Northern Europe, the debate has often centered on the rich archaeological record of the Western Baltic, but even here it is unclear how quickly or completely people abandoned wild terrestrial and marine resources after the introduction of domesticated plants and animals at \(\approx 4000\) calibrated years B.C. Ceramic containers are found ubiquitously on these sites and contain remarkably well-preserved lipids derived from the original use of the vessel. Reconstructing culinary practices from this ceramic record can contribute to longstanding debates concerning the origins of farming. Here we present data on the molecular and isotopic characteristics of lipids extracted from 133 ceramic vessels and 100 carbonized surface residues dating to immediately before and after the first evidence of domesticated animals and plants at \(\approx 4000\) calibrated years B.C. Ceramic containers are found ubiquitously on these sites and contain remarkably well-preserved lipids derived from the original use of the vessel. Reconstructing culinary practices from this ceramic record can contribute to longstanding debates concerning the origins of farming.

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isotope | Mesolithic | paleodiet | organic residue analysis | GC-combustion-isotope ratio

**Jürgens 1979**


**Rottländer 1995**


In seiner Abhandlung über vorgeschichtliche Feuerstülpchen erwähnt E. Cosack nicht die zu diesem Formenkreis gehörenden Rössener Siebe aus Aldenhoven2 und die ebenfalls
hierhin gehörenden Siebgefässcherben aus Zambujal, Portugal. Der Gefäßtypus ist ein Durchläufer und deswegen chronologisch wenig empfindlich.
Die Schleifspuren an diesem Gefäßtypus werden von allen Autoren erwähnt, aber niemand beachtet, daß die schleifende Abnutzung nicht in einer Ebene liegt, wie das auch Cosack voraussetzt, wenn er von einer scharrenden Bewegung spricht, sondern daß die Abnutzung (in allen mir bekannten gewordenen Fällen) konisch ist. Das ist besonders gut an den Schnittzeichnungen der Aldenhovener Gefäße (Jürgens Taf. 1 u. 2) zu sehen.

**Story or Book**

**Gilbey 2011**

John Gilbey savours a fast-paced technological thriller based at the intersection of the real world and the cyber-universe.


Unlike much of Stephenson’s writing, REAMDE is set in the present. But it shares many aspects of his previous work, such as the highly regarded future-based novel *Snow Crash*: a strong-willed young heroine, dramatic and cinematic action, and lots of technology. His writing style has developed markedly since his early novels, in which gleeful descriptions of violent mayhem occasionally verged on the cartoonish.

**Pettitt 2011**


There is much subtlety in the detailed analyses of this book, fully justifying the effort spent in interpreting these immaculately preserved sites. The goals of the project are at the heart of why André Leroi-Gourhan began excavating at Pincevent in the first place. He would have every reason to be proud of this legacy, one in which the people of the Palaeolithic come to the fore, not as the hot air of archaeological theorising over ‘the individual’ but as real people, preserved forever in the remains of their very domesticity.