

References

Afrika

KINDERMANN 2006

Karin Kindermann, Olaf Bubbenzer, Stefanie Nussbaum, Heiko Riemer, Frank Darius, Nadja Pöllath & Ursula Smettan, *Palaeoenvironment and Holocene land use of Djara, Western Desert of Egypt*. [Quaternary Science Reviews](#) **25** (2006), 1619–1637.

The results of the interdisciplinary project ACACIA support the assumption of a more humid climate at Djara, on the Egyptian Limestone Plateau, which is a hyper-arid desert today, during the early and mid-Holocene. The ancient plant and animal inventories give new impetus for the suggestion of an interfingering of two climatic regimes, the winter rains from the north and west and the summer monsoonal rains from the south, on the latitude of Djara. A playa sediment sequence, the composition of plant and animal taxa as well as the reconstructed settlement patterns indicate a semi-arid climate with alternating more humid and drier conditions.

The concentration of prehistoric sites in the Djara depression points to locally favourable conditions in contrast to the surrounding plateau surface. The widespread catchment and a distinct system of palaeochannels offered fresh water over a period of time due to the run-off from the plateau surface after rain events. Although the ecological conditions were better during the Holocene humid phase than they are today, a sedentary way of life was improbable. The hydrological constraints require altogether highly mobile subsistence strategies. Shells of the Nile bivalve *Aspatharia* sp. (*Spathopsis* sp.) give evidence for contacts between Djara and the Nile Valley, which remains beside the Egyptian oases an important retreat area with perennially available water. The decrease of radiocarbon dates and related archaeological sites around 6300 BP (c. 5300 cal BC) indicate the depopulation of the Djara region as a consequence of the drying trend. While the drop off of the ¹⁴C-dates can also be observed in other desert research areas of the ACACIA-project, we date the end of the Holocene humid phase about 300 years earlier than previously suggested.

Aktuell

EMMANUEL 2014

Simon Emmanuel & Yael Levenson, *Limestone weathering rates accelerated by micron-scale grain detachment*. [Geology](#) (2014), preprint, 1–4. DOI:10.1130/G35815.1.

The weathering of carbonate rocks plays a critical role in the evolution of landscapes, the erosion of buildings and monuments, and the global-scale shifting of carbon from the atmosphere to the ocean. Chemical dissolution is often assumed to govern the rates of weathering of carbonate rocks, although some studies have suggested that mechanical erosion could also play an important role. Quantifying the rates of the different processes has proved challenging, in part due to the high degree of variability encountered across different scales in both field and laboratory conditions. To constrain the rates and mechanisms controlling long-term limestone

weathering, we analyze a lidar scan of the Western Wall, a Roman-period edifice located in Jerusalem. We find that extreme erosion rates in fine-grained micritic limestone blocks are as much as two orders of magnitude higher than the average rates estimated for coarse-grained limestone blocks at the same site. Atomic force microscope imaging of dissolving micritic limestone suggests that these elevated reaction rates are likely to be the result of rapid dissolution along micron-scale grain boundaries, followed by mechanical detachment of tiny particles from the surface. Our analysis indicates that such grain detachment could be the dominant erosional mode for fine-grained carbonate rocks in many regions on Earth.

FACCHETTI 2014

Antonio Facchetti, *Printed diodes operating at mobile phone frequencies*. [PNAS 111 \(2014\), 11917–11918](#).

Compared with the diode rectifier, the other device components are less demanding in terms of high-frequency performance. For example, the transistors used for data modulation—although operating at the same incoming frequency of the base carrier—can function at considerably higher voltages than the rectifying device and can use the full period of the carrier wave.

GRACIANI 2014

Jesus Graciani et al., *Highly active copper-ceria and copper-ceria-titania catalysts for methanol synthesis from CO₂*. [science 345 \(2014\), 546–550](#).

[s345-0546-Supplement.pdf](#)

Jesus Graciani, Kumudu Mudiyansele, Fang Xu, Ashleigh E. Baber, Jaime Evans, Sanjaya D. Senanayake, Dario J. Stacchiola, Ping Liu, Jan Hrbek, Javier Fernandez Sanz & Jose A. Rodriguez

The transformation of CO₂ into alcohols or other hydrocarbon compounds is challenging because of the difficulties associated with the chemical activation of CO₂ by heterogeneous catalysts. Pure metals and bimetallic systems used for this task usually have low catalytic activity. Here we present experimental and theoretical evidence for a completely different type of site for CO₂ activation: a copper-ceria interface that is highly efficient for the synthesis of methanol. The combination of metal and oxide sites in the copper-ceria interface affords complementary chemical properties that lead to special reaction pathways for the CO₂–CH₃OH conversion.

MADRAS 2014

Bertha K. Madras, *Dopamine challenge reveals neuroadaptive changes in marijuana abusers*. [PNAS 111 \(2014\), 11915–11916](#).

A critical longitudinal study showing a significant IQ decline in early marijuana users is a prime example of the direction in which the field should be going, but with coordinated brain-imaging approaches. In view of the growing public health concerns of escalating high-dose, high-frequency marijuana use, early age of initiation and daily use, high prevalence of marijuana addiction, rising treatment needs, the void of effective treatment, high rates of relapse, association with psychosis and IQ reduction, a rising tide of emergency room episodes, and vehicular deaths, constitute compelling reasons to expand marijuana research and to clarify its underlying biology and treatment targets/strategies.

VAN NOORDEN 2014

Richard van Noorden, *Social network and the scientists*. [nature 512 \(2014\), 126–129](#).

Giant academic social networks have taken off to a degree that no one expected even a few years ago. A Nature survey explores why.

Despite the excitement and investment, it is far from clear how much of the activity on these sites involves productive engagement, and how much is just passing curiosity — or a desire to access papers shared by other users that they might otherwise have to pay for. “I’ve met basically no academics in my field with a favourable view of ResearchGate,” says Daniel MacArthur, a geneticist at Massachusetts General Hospital in Boston.

The most-selected activity on both ResearchGate and Academia.edu was simply maintaining a profile in case someone wanted to get in touch — suggesting that many researchers regard their profiles as a way to boost their professional presence online. After that, the most popular options involved posting content related to work, discovering related peers, tracking metrics and finding recommended research papers.

“I hardly know any scientists who don’t violate copyright laws. We just fly below the radar and hope that the publishers don’t notice.” “This is really part of the wider battle where academics want to share their papers freely online, whereas publishers want to keep content behind a paywall to monetize it,”

SANI 2014

Negar Sani et al., *All-printed diode operating at 1.6 GHz*. [PNAS 111 \(2014\), 11943–11948](#).

pnas111-11943-Supplement.mp4

Negar Sani, Mats Robertsson, Philip Cooper, Xin Wang, Magnus Svensson, Peter Andersson Ersman, Petronella Norberg, Marie Nilsson, David Nilsson, Xi-anjie Liu, Hjalmar Hesselbom, Laurent Akesso, Mats Fahlman, Xavier Crispin, Isak Engquist, Magnus Berggren & Göran Gustafsson

Printed electronics are considered for wireless electronic tags and sensors within the future Internet-of-things (IoT) concept. As a consequence of the low charge carrier mobility of present printable organic and inorganic semiconductors, the operational frequency of printed rectifiers is not high enough to enable direct communication and powering between mobile phones and printed e-tags. Here, we report an all-printed diode operating up to 1.6 GHz. The device, based on two stacked layers of Si and NbSi₂ particles, is manufactured on a flexible substrate at low temperature and in ambient atmosphere. The high charge carrier mobility of the Si microparticles allows device operation to occur in the charge injection-limited regime. The asymmetry of the oxide layers in the resulting device stack leads to rectification of tunneling current. Printed diodes were combined with antennas and electrochromic displays to form an all-printed e-tag. The harvested signal from a Global System for Mobile Communications mobile phone was used to update the display. Our findings demonstrate a new communication pathway for printed electronics within IoT applications.

UHF | silicon particle

VERNON 2014

Richard J. W. Vernon, Clare A. M. Sutherland, Andrew W. Young & Tom Hartley, *Modeling first impressions from highly variable facial images*. [PNAS 111 \(2014\), E3353–E3361](#).

pnas111-E3353-Supplement1.avi, pnas111-E3353-Supplement2.avi, pnas111-E3353-Supplement3.avi

First impressions of social traits, such as trustworthiness or dominance, are reliably perceived in faces, and despite their questionable validity they can have

considerable real-world consequences. We sought to uncover the information driving such judgments, using an attribute-based approach. Attributes (physical facial features) were objectively measured from feature positions and colors in a database of highly variable “ambient” face photographs, and then used as input for a neural network to model factor dimensions (approachability, youthful-attractiveness, and dominance) thought to underlie social attributions. A linear model based on this approach was able to account for 58 % of the variance in raters’ impressions of previously unseen faces, and factor-attribute correlations could be used to rank attributes by their importance to each factor. Reversing this process, neural networks were then used to predict facial attributes and corresponding image properties from specific combinations of factor scores. In this way, the factors driving social trait impressions could be visualized as a series of computer-generated cartoon face-like images, depicting how attributes change along each dimension. This study shows that despite enormous variation in ambient images of faces, a substantial proportion of the variance in first impressions can be accounted for through linear changes in objectively defined features.

face perception | social cognition | person perception | impression formation

WHELAN 2014

Robert Whelan et al., *Neuropsychosocial profiles of current and future adolescent alcohol misusers*. *nature* **512** (2014), 185–189.

n512-0185-Supplement1.pdf, n512-0185-Supplement2.xlsx, n512-0185-Supplement3.xlsx, n512-0185-Supplement4.xlsx

Robert Whelan, Richard Watts, Catherine A. Orr, Robert R. Althoff, Eric Artiges, Tobias Banaschewski, Gareth J. Barker, Arun L. W. Bokde, Christian Büchel, Fabiana M. Carvalho, Patricia J. Conrod, Herta Flor, Mira Fauth-Bühler, Vincent Frouin, Juergen Gallinat, Gabriela Gan, Penny Gowland, Andreas Heinz, Bernd Ittermann, Claire Lawrence, Karl Mann, Jean-Luc Martinot, Frauke Nees, Nick Ortiz, Marie-Laure Paillère-Martinot, Tomas Paus, Zdenka Pausova, Marcella Rietschel, Trevor W. Robbins, Michael N. Smolka, Andreas Ströhle, Gunter Schumann, Hugh Garavan & the IMAGEN Consortium

A comprehensive account of the causes of alcohol misuse must accommodate individual differences in biology, psychology and environment, and must disentangle cause and effect. Animal models¹ can demonstrate the effects of neurotoxic substances; however, they provide limited insight into the psycho-social and higher cognitive factors involved in the initiation of substance use and progression to misuse. One can search for pre-existing risk factors by testing for endophenotypic biomarkers² in non-using relatives; however, these relatives may have personality or neural resilience factors that protect them from developing dependence³. A longitudinal study has potential to identify predictors of adolescent substance misuse, particularly if it can incorporate a wide range of potential causal factors, both proximal and distal, and their influence on numerous social, psychological and biological mechanisms⁴. Here we apply machine learning to a wide range of data from a large sample of adolescents (n5692) to generate models of current and future adolescent alcohol misuse that incorporate brain structure and function, individual personality and cognitive differences, environmental factors (including gestational cigarette and alcohol exposure), life experiences, and candidate genes. These models were accurate and generalized to novel data, and point to life experiences, neurobiological differences and personality as important antecedents of binge drinking. By identifying the vulnerability factors underlying individual differences in alcohol misuse, these models shed light on the aetiology of alcohol misuse and suggest targets for prevention.

YANG 2014

Patricia J. Yang, Jonathan Pham, Jerome Choo & David L. Hu, *Duration of urination does not change with body size*. *PNAS* **111** (2014), 11932–11937.

pnas111-11932-Supplement1.mov, pnas111-11932-Supplement2.mov, pnas111-11932-Supplement3.mov, pnas111-11932-Supplement4.mov, pnas111-11932-Supplement5.pdf

Many urological studies rely on models of animals, such as rats and pigs, but their relation to the human urinary system is poorly understood. Here, we elucidate the hydrodynamics of urination across five orders of magnitude in body mass. Using high-speed videography and flow-rate measurement obtained at Zoo Atlanta, we discover that all mammals above 3 kg in weight empty their bladders over nearly constant duration of 21 ± 13 s. This feat is possible, because larger animals have longer urethras and thus, higher gravitational force and higher flow speed. Smaller mammals are challenged during urination by high viscous and capillary forces that limit their urine to single drops. Our findings reveal that the urethra is a flow-enhancing device, enabling the urinary system to be scaled up by a factor of 3,600 in volume without compromising its function. This study may help to diagnose urinary problems in animals as well as inspire the design of scalable hydrodynamic systems based on those in nature.

urology | allometry | scaling | Bernoulli's principle

Anthropologie

ECKHARDT 2014

Robert B. Eckhardt, Maciej Henneberg, Alex S. Weller & Kenneth J. Hsü, *Rare events in earth history include the LB1 human skeleton from Flores, Indonesia, as a developmental singularity, not a unique taxon*. *PNAS* **111** (2014), 11961–11966.

The original centrally defining features of “Homo floresiensis” are based on bones represented only in the single specimen LB1. Initial published values of 380-mL endocranial volume and 1.06-m stature are markedly lower than later attempts to confirm them, and facial asymmetry originally unreported, then denied, has been established by our group and later confirmed independently. Of nearly 200 syndromes in which microcephaly is one sign, more than half include asymmetry as another sign and more than one-fourth also explicitly include short stature. The original diagnosis of the putative new species noted and dismissed just three developmental abnormalities. Subsequent independent attempts at diagnosis (Laron Syndrome, Majewski osteodysplastic primordial dwarfism type II, cretinism) have been hampered a priori by selectively restricted access to specimens, and disparaged a posteriori using data previously unpublished, without acknowledging that all of the independent diagnoses corroborate the patent abnormal singularity of LB1. In this report we establish in detail that even in the absence of a particular syndromic diagnosis, the originally defining features of LB1 do not establish either the uniqueness or normality necessary to meet the formal criteria for a type specimen of a new species. In a companion paper we present a new syndromic diagnosis for LB1.

atavism | biogeography | developmental morphology | Pleistocene | probability

HENNEBERG 2014

Maciej Henneberg, Robert B. Eckhardt, Sakdapong Chavanaves & Kenneth J. Hsü, *Evolved developmental homeostasis disturbed in LB1*

from Flores, Indonesia, denotes Down syndrome and not diagnostic traits of the invalid species *Homo floresiensis*. [PNAS 111 \(2014\), 11967–11972](#).

Human skeletons from Liang Bua Cave, Flores, Indonesia, are coeval with only *Homo sapiens* populations worldwide and no other previously known hominins. We report here for the first time to our knowledge the occipitofrontal circumference of specimen LB1. This datum makes it possible to link the 430-mL endocranial volume of LB1 reported by us previously, later confirmed independently by other investigators, not only with other human skeletal samples past and present but also with a large body of clinical data routinely collected on patients with developmental disorders. Our analyses show that the brain size of LB1 is in the range predicted for an individual with Down syndrome (DS) in a normal small-bodied population from the geographic region that includes Flores. Among additional diagnostic signs of DS and other skeletal dysplasias are abnormally short femora combined with disproportionate flat feet. Liang Bua Cave femora, known only for LB1, match interlimb proportions for DS. Predictions based on corrected LB1 femur lengths show a stature normal for other *H. sapiens* populations in the region.

asymmetry | atavism | body mass | body height

HUERTA-SÁNCHEZ 2014

Emilia Huerta-Sánchez et al., *Altitude adaptation in Tibetans caused by introgression of Denisovan-like DNA*. [nature 512 \(2014\), 194–197](#).
[n512-0194-Supplement.pdf](#)

Emilia Huerta-Sánchez, Xin Jin, Asan, Zhuoma Bianba, Benjamin M. Peter, Nicolas Vinckenbosch, Yu Liang, Xin Yi, Mingze He, Mehmet Somel, Peixiang Ni, BoWang, Xiaohua Ou, Huasang, Jiangbai Luosang, Zha Xi Ping Cuo, Kui Li, Guoyi Gao, Ye Yin, Wei Wang, Xiuqing Zhang, Xun Xu, Huanming Yang, Yingrui Li, JianWang, JunWang & Rasmus Nielsen

As modern humans migrated out of Africa, they encountered many new environmental conditions, including greater temperature extremes, different pathogens and higher altitudes. These diverse environments are likely to have acted as agents of natural selection and to have led to local adaptations. One of the most celebrated examples in humans is the adaptation of Tibetans to the hypoxic environment of the high altitude Tibetan plateau^{1–3}. A hypoxia pathway gene, *EPAS1*, was previously identified as having the most extreme signature of positive selection in Tibetans^{4–10}, and was shown to be associated with differences in haemoglobin concentration at high altitude. Re-sequencing the region around *EPAS1* in 40 Tibetan and 40 Han individuals, we find that this gene has a highly unusual haplotype structure that can only be convincingly explained by introgression of DNA from Denisovan or Denisovan-related individuals into humans. Scanning a larger set of worldwide populations, we find that the selected haplotype is only found in Denisovans and in Tibetans, and at very low frequency among Han Chinese. Furthermore, the length of the haplotype, and the fact that it is not found in any other populations, makes it unlikely that the haplotype sharing between Tibetans and Denisovans was caused by incomplete ancestral lineage sorting rather than introgression. Our findings illustrate that admixture with other hominin species has provided genetic variation that helped humans to adapt to new environments.

Bibel

FAUST 2014

Avraham Faust, *On Jerusalem's expansion during the Iron Age II*.

In: EVELINE VAN DER STEEN, JEANNETTE BOERTIEN & NOOR MULDER-HYMANS (Hrsg.), *Exploring the Narrative, Jerusalem and Jordan in the Bronze and Iron Ages*. (London 2014), 256–256.

As the Iron Age progressed, the City of David became crowded, and some of the population settled outside the city walls, gradually expanding toward the Western Hill. This process started quite early (cf. the Ophel and the Givati Parking lot, above), and some limited settlement probably reached the top of the Western Hill at some point in the ninth century (cf. the Lachish IV pottery unearthed). The process intensified during the eighth century, and perhaps slightly accelerated in its last third. The settlers in the unwalled areas were initially members of the lower classes; the rich (and the administration) probably stayed in the walled areas (cf. Faust 2003b). At any event, in the eighth century much of the Western Hill was probably densely occupied. At some point toward the end of the century, probably because of the impending Assyrian campaign, the entire Western Hill was encompassed with a new massive city wall. Although probably not all the hill was settled at the time, or at least not densely settled, and the wall probably encompassed also some more sparsely settled quarters, it is clear that the number of people was significant enough for the kingdom to embark on this enterprise. The incorporation of some relatively empty areas was due to the need to build the wall along a defensible route, but also in order to enable the kingdom to use for its needs the empty regions that were now defended. Encompassing the Western Hill with a wall, however, inevitably accelerated the settlement processes mentioned above, and it probably served as an incentive for the transfer of royal structures to the empty new quarters. Palaces and other public buildings would therefore be expected to be among the structures that were erected in the Western Hill following its incorporation within the city walls (see also Barkay 2000, 236; 2003, 21-23; see more below).” Accordingly, some of the elite probably moved to this region.³⁸ The new neighborhoods were therefore inhabited by people of all social classes. As a result, settlement in Jerusalem became denser in the seventh century, and this can also be seen in the city’s hinterland. The fact that parts of Judah were devastated in Sennacherib’s campaign, while Jerusalem survived, further explains Jerusalem’s growth, as refugees (mainly from the Shephelah) probably flooded the city. The northern extramural quarters, and probably part of the Western Hill, were the regions where they settled. The late seventh century, which was perhaps a peak of cultural and literary activity in Jerusalem (e.g. Na’aman 2002), was also the peak of the settlement in the Western Hill (fortifications were also renewed at the time; e.g., Geva 2003 a, 513-16). The number of inhabitants in the city was probably tens of thousands (most probably over 20,000).

Klima

PRAETORIUS 2014

Summer K. Praetorius & Alan C. Mix, *Synchronization of North Pacific and Greenland climates preceded abrupt deglacial warming*. *science* **345** (2014), 444–448.

s345-0444-Supplement.pdf

Some proposed mechanisms for transmission of major climate change events between the North Pacific and North Atlantic predict opposing patterns of variations; others suggest synchronization. Resolving this conflict has implications for regulation of poleward heat transport and global climate change. New multidecadal-resolution foraminiferal oxygen isotope records from the Gulf of

Alaska (GOA) reveal sudden shifts between intervals of synchronicity and asynchronicity with the North Greenland Ice Core Project (NGRIP) $\delta^{18}O$ record over the past 18,000 years. Synchronization of these regions occurred 15,500 to 11,000 years ago, just prior to and throughout the most abrupt climate transitions of the last 20,000 years, suggesting that dynamic coupling of North Pacific and North Atlantic climates may lead to critical transitions in Earth's climate system.

ROTHER 2014

Henrik Rother, David Fink, James Shulmeister, Charles Mifsud, Michael Evans & Jeremy Pugh, *The early rise and late demise of New Zealand's last glacial maximum*. *PNAS* **111** (2014), 11630–11635.

Recent debate on records of southern midlatitude glaciation has focused on reconstructing glacier dynamics during the last glacial termination, with different results supporting both in-phase and out-of-phase correlations with Northern Hemisphere glacial signals. A continuing major weakness in this debate is the lack of robust data, particularly from the early and maximum phase of southern midlatitude glaciation (≈ 30 –20 ka), to verify the competing models. Here we present a suite of 58 cosmogenic exposure ages from 17 last-glacial ice limits in the Rangitata Valley of New Zealand, capturing an extensive record of glacial oscillations between 28–16 ka. The sequence shows that the local last glacial maximum in this region occurred shortly before 28 ka, followed by several successively less extensive ice readvances between 26–19 ka. The onset of Termination 1 and the ensuing glacial retreat is preserved in exceptional detail through numerous recessional moraines, indicating that ice retreat between 19–16 ka was very gradual. Extensive valley glaciers survived in the Rangitata catchment until at least 15.8 ka. These findings preclude the previously inferred rapid climate-driven ice retreat in the Southern Alps after the onset of Termination 1. Our record documents an early last glacial maximum, an overall trend of diminishing ice volume in New Zealand between 28–20 ka, and gradual deglaciation until at least 15 ka.

surface exposure dating | global climate linkages

WILLS 2014

W. H. Wills, Brandon L. Drake & Wetherbee B. Dorshow, *Prehistoric deforestation at Chaco Canyon?* *PNAS* **111** (2014), 11584–11591.

pnas111-11584-Supplement.doc

Ancient societies are often used to illustrate the potential problems stemming from unsustainable land-use practices because the past seems rife with examples of sociopolitical “collapse” associated with the exhaustion of finite resources. Just as frequently, and typically in response to such presentations, archaeologists and other specialists caution against seeking simple cause-and effect-relationships in the complex data that comprise the archaeological record. In this study we examine the famous case of Chaco Canyon, New Mexico, during the Bonito Phase (ca. AD 860–1140), which has become a prominent popular illustration of ecological and social catastrophe attributed to deforestation. We conclude that there is no substantive evidence for deforestation at Chaco and no obvious indications that the depopulation of the canyon in the 13th century was caused by any specific cultural practices or natural events. Clearly there was a reason why these farming people eventually moved elsewhere, but the archaeological record has not yet produced compelling empirical evidence for what that reason might have been. Until such evidence appears, the legacy of Ancestral Pueblo society in Chaco should not be used as a cautionary story about socioeconomic failures in the modern world.

societal collapse | geochemical sourcing | GIS | least-cost pathways

Methoden

REEPMEYER 2011

Christian Reepmeyer, Erich Claßen & Andreas Zimmermann, ‘*Bandkeramik*’ stone tool production and social network analysis, *A case study*. In: BEN MARWICK & ALEX MACKAY (Hrsg.), *Keeping your Edge, Recent Approaches to the Organisation of Stone Artefact Technology*. (Oxford 2011), 85–96.

Social Network Analysis is a powerful tool to describe underlying social structures in exchange networks. Developed in the social sciences to quantitatively analyse relational data, Social Network Analysis has been largely overlooked by archaeologists as an opportunity to interpret their data (Bollig 2000; Claßen 2004; Hunt 1988; Reepmeyer 2002). In this paper, the application of social network analysis to the system of stone tool production of the first Neolithic culture in central Europe, the Linear Bandkeramik culture, will be discussed. The aim is to test previous models of settlement structure and to develop new interpretations of the organisation of stone tool exchange.

Neolithikum

LECHTERBECK 2014

Jutta Lechterbeck, Kevan Edinborough, Tim Kerig, Ralph Fyfe, Neil Roberts & Stephen Shennan, *Is Neolithic land use correlated with demography? An evaluation of pollen-derived land cover and radiocarbon-inferred demographic change from Central Europe*. [The Holocene \(2014\), preprint, 1–11. DOI:10.1177/0959683614540952](#).

The transformation of natural landscapes in Middle Europe began in the Neolithic as a result of the introduction of food-producing economies. This paper examines the relation between land-cover and demographic change in a regionally restricted case study. The study area is the Western Lake Constance area which has very detailed palynological as well as archaeological records. We compare land-cover change derived from nine pollen records using a pseudo-biomisation approach with ^{14}C date probability density functions from archaeological sites which serve as a demographic proxy. We chose the Lake Constance area as a regional example where the pollen signal integrates a larger spatial pattern. The land-cover reconstructions for this region show first notable impacts at the Middle to Young Neolithic transition. The beginning of the Bronze Age is characterised by increases of arable land and pasture/ meadow, whereas the deciduous woodland decreases dramatically. Changes in the land-cover classes show a correlation with the ^{14}C density curve: the correlation is best with secondary woodland in the Young Neolithic which reflects the lake shore settlement dynamics. In the Early Bronze Age, the radiocarbon density correlates with open land-cover classes, such as pasture, meadow and arable land, reflecting a change in the land-use strategy. The close overall correspondence between the two archives implies that population dynamics and land-cover change were intrinsically linked. We therefore see human impact as a key driver for vegetation change in the Neolithic. Climate might have an influence on vegetation development, but the changes caused by human land use are clearly detectable from Neolithic times, at least in these densely settled, mid-altitude landscapes.

Keywords: demography, Holocene, Lake Constance, land-cover reconstruction, Middle Europe, Neolithic, pollen, radiocarbon

Politik

BUCHHOLZ 2014

Günter Buchholz, *Gender Studies, Die Niedersächsische Forschungsevaluation und ihre offenen Fragen*. *Wiwi-Online.De* 2014, 601.

<http://www.wiwi-online.de/fachartikel.php?artikel=601>.

Man bedenke mit Blick auf den Fragebogen, dass die Expertinnen völlig frei darin waren, so zu antworten, wie es ihnen angemessen erschienen wäre. Es handelte sich, auch wenn bestimmte Vorkenntnisse in sie Eingang gefunden haben, um offene Fragen, so dass sie mit entsprechenden Begründungen auch ganz hätten zurückgewiesen werden können. Durch den Boykott zeigt sich allerdings, dass man es vorzieht, die Kommunikation zu verweigern. Warum?

Aus unserer Sicht wären es, neben den wichtigen Fragen nach den nachweisbaren individuellen wissenschaftlichen Leistungen der niedersächsischen Gender – Forscherinnen, über die großzügig geschwiegen wird, beispielsweise diese Fragen gewesen, die die Kommission für die Forschungsevaluation der Gender – Studies in Niedersachsen hätte stellen und hätte beantworten lassen müssen, und dies nicht zuletzt zur dringend nötigen Information der Wissenschaft und der Öffentlichkeit.

Statt dessen ist, von Frauen, mit Frauen, über Frauen, ein Lobbybericht für zusätzlichen Input geschrieben – und unterschrieben! – worden, der alle relevanten Fragen bezüglich der Wissenschaftlichkeit und der Forschungsergebnisse offenbar absichtsvoll ausblendet.

Und deshalb handelt es sich bei dieser sogenannten Forschungsevaluation um eine Farce, eine Farce, die ein starker Hinweis auf eine massive Fehlerwendung öffentlicher Mittel ist.

Religion

COLLINS 2014

Andrew Collins, *Göbekli Tepe: Who Built It, When, and Why? A Preview to Genesis of the Gods*. (2014).

Göbekli Tepe is a name that will be familiar to anyone interested in the ancient mysteries subject. Billed as the oldest stone temple in the world, it is composed of a series of megalithic structures containing rings of beautifully carved T-shaped pillars. It sits on a mountain ridge at the western termination of the Ante-Taurus range in southeast Anatolia (today part of the Republic of Turkey), just eight miles (thirteen kilometres) from the ancient city of Urfa, Abraham's traditional birthplace. Here its secrets have remained hidden beneath an artificial, belly-shaped mound for the last ten thousand years. Agriculture and animal husbandry were barely known when Göbekli Tepe was built, and roaming the fertile landscape of southwest Asia were, we are told, primitive huntergatherers, whose sole existence revolved around survival on a day-to-day basis.

So what is Göbekli Tepe? Who created it, and why? More pressingly, why did its builders bury their creation at the end of its useful life?

Story or Book

WILSON 2014

Kyle L. Wilson & Andrew B. Barbour, *The death of immortality, Life lessons*. *nature* 512 (2014), 226.

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