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Literatur

Aktuell

Aagaard 2014

Kjersti Aagaard, Jun Ma, Kathleen M. Antony, Radhika Ganu, Joseph Petrosino & James Versalovic, *The Placenta Harbors a Unique Microbiome*. Science Translational Medicine **6** (2014), 237ra065. DOI:10.1126/scitranslmed.3008599.

SciTransMed06-237ra065-Supplement.pdf

Editor's Summary Contrary to the prevailing idea of a "sterile" intrauterine environment, Aagaard and coauthors demonstrated the consistent presence of a microbiome in placentas from healthy pregnancies. This microbiome was consistently different from those reported in other parts of the body, including the skin and urogenital tract. The placental microbiome was most similar to that of the oral cavity, but the clinical implications of this finding remain to be explored. In addition, the authors identified associations between the composition of the placental microbiome and a may history of remote antenatal infection, as well as preterm birth, raising the possibility that the placental microbiome play a role in these events.

Abstract Humans and their microbiomes have coevolved as a physiologic community composed of distinct body site niches with metabolic and antigenic diversity. The placental microbiome has not been robustly interrogated, despite recent demonstrations of intracellular bacteria with diverse metabolic and immune regulatory functions. A population-based cohort of placental specimens collected under sterile conditions from 320 subjects with extensive clinical data was established for comparative 16S ribosomal DNA–based and whole-genome shotgun (WGS) metagenomic studies. Identified taxa and their gene carriage patterns were compared to other human body site niches, including the oral, skin, airway (nasal), vaginal, and gut microbiomes from nonpregnant controls. We characterized a unique placental microbiome niche, composed of nonpathogenic commensal microbiota from the Firmicutes, Tenericutes, Proteobacteria, Bacteroidetes, and Fusobacteria phyla. In aggregate, the placental microbiome profiles were most akin (Bray-Curtis dissimilarity <0.3) to the human oral microbiome. 16Sbased operational taxonomic unit analyses revealed associations of the placental microbiome with a remote history of antenatal infection (permutational multivariate analysis of variance, $P = 0.006$), such as urinary tract infection in the first trimester, as well as with preterm birth <37 weeks ($P = 0.001$).

Frederick 2014

Robert Frederick, *Mother's milk mysteries*. PNAS **111** (2014), 7165.

"We know that milk is predicting babies' behavior," says Hinde, "and that behavior has to be mediated through the brain and the mind." Understanding that causal relationship with a human study, however, would involve extremely large sample sizes to capture all of the natural variation in maternal styles, diet, and environment.

Fritz 2014

Claudia Fritz, Joseph Curtin, Jacques Poitevineau, Hugues Borsarello, Indiana Wollman, Fan-Chia Tao & Thierry Ghasarossian, *Soloist evaluations of six Old Italian and six new violins*. PNAS **111** (2014), 7224–7229.

Many researchers have sought explanations for the purported tonal superiority of Old Italian violins by investigating varnish and wood properties, plate tuning systems, and the spectral balance of the radiated sound. Nevertheless, the fundamental premise of tonal superiority has been investigated scientifically only once very recently, and results showed a general preference for new violins and that players were unable to reliably distinguish new violins from old. The study was, however, relatively small in terms of the number of violins tested (six), the time allotted to each player (an hour), and the size of the test space (a hotel room). In this study, 10 renowned soloists each blind-tested six Old Italian violins (including five by Stradivari) and six new during two 75-min sessions—the first in a rehearsal room, the second in a 300-seat concert hall. When asked to choose a violin to replace their own for a hypothetical concert tour, 6 of the 10 soloists chose a new instrument. A single new violin was easily the most-preferred of the 12. On average, soloists rated their favorite new violins more highly than their favorite old for playability, articulation, and projection, and at least equal to old in terms of timbre. Soloists failed to distinguish new from old at better than chance levels. These results confirm and extend those of the earlier study and present a striking challenge to near-canonical beliefs about Old Italian violins.

subjective evaluation | music | perception

Levitin 2014

Daniel J. Levitin, *Expert violinists can't tell old from new*. PNAS **111** (2014), 7168–7169.

In PNAS, Fritz et al. follow up their groundbreaking 2012 paper with what will probably be the final nail in the coffin for those who would believe that old musical instruments sound demonstrably better than new instruments. The results of Fritz et al. neatly parallel those of investigators studying the inability to discriminate fine wines from cheap ones and even red wine from white. Setting aside some of the methodological problems that exist in many wine competitions, wine experts have been shown to be no more accurate in distinguishing wines under blind test conditions than regular wine drinkers. In one particularly ambitious study, expert wine assessors were studied over a 15-y period for internal consistency, and their test-retest scores accounted for a measly 25 % of the variance. In another sample of 6,000 blind tastings, the correlation between price and rating was small and negative. That study concluded that the wine recommendations of experts were a poor guide for consumers.

Anthropologie

Barham 2002

Lawrence S. Barham, *Systematic Pigment Use in the Middle Pleistocene of South-Central Africa*. Current Anthropology **43** (2002), 181–190.

Neanderthals did collect and process mineral pigments but predominantly manganese dioxide rather than hematite and not in the quantities seen in the contemporary southern African archaeological record. The behavioral differences in

pigment use between Neanderthals and early moderns in Africa have their roots in the Middle Pleistocene. Central and East African hominids had incorporated color into their lives by 270,000 years ago, and this addition to their behavioral repertoire would remain a feature of the African archaeological record until the historical present.

Hodgson 2014

Derek Hodgson, *Decoding the Blombos Engravings, Shell Beads and Diepkloof Ostrich Eggshell Paterns*. Cambridge Archaeological Journal **24** (2014), 57–69.

The debate regarding the status of the Blombos ochre engravings and shell beads for gauging the timeline of when cognitive abilities and symbolic intent appeared has been controversial. This is mainly due to the fact that what is referred to as symbolic is oten too loosely deined and is therefore atributed to artefacts in an indiscriminate way. Recent evidence from various concurrent sites in southern Africa, including Blombos, provide the opportunity for a more nuanced analysis of the probable level of symbolic intent and how this relates to neuro-cognitive precursors. In what follows, it will be shown that, although some of the southern African artefacts do indeed demonstrate particular kinds of 'symbolic' intent, others need to be approached with caution. Data from the visual brain is presented that provides crucial evidence as to the appropriate level of intent suggested by the engravings and shell beads from the southern Africa context.

Reyes-Centeno 2014

Hugo Reyes-Centeno, Silvia Ghirotto, Florent Détroit, Dominique Grimaud-Hervé, Guido Barbujani & Katerina Harvati, *Genomic and cranial phenotype data support multiple modern human dispersals from Africa and a southern route into Asia*. PNAS **111** (2014), 7248–7253.

pnas111-07248-Supplement1.xlsx

Despite broad consensus on Africa as the main place of origin for anatomically modern humans, their dispersal pattern out of the continent continues to be intensely debated. In extant human populations, the observation of decreasing genetic and phenotypic diversity at increasing distances from sub-Saharan Africa has been interpreted as evidence for a single dispersal, accompanied by a series of founder effects. In such a scenario, modern human genetic and phenotypic variation was primarily generated through successive population bottlenecks and drift during a rapid worldwide expansion out of Africa in the Late Pleistocene. However, recent genetic studies, as well as accumulating archaeological and paleoanthropological evidence, challenge this parsimonious model. They suggest instead a "southern route" dispersal into Asia as early as the late Middle Pleistocene, followed by a separate dispersal into northern Eurasia. Here we test these competing out-of-Africa scenarios by modeling hypothetical geographical migration routes and assessing their correlation with neutral population differentiation, as measured by genetic polymorphisms and cranial shape variables of modern human populations from Africa and Asia. We showthat both lines of evidence support amultiple-dispersalsmodel in which Australo-Melanesian populations are relatively isolated descendants of an early dispersal, whereas other Asian populations are descended from, or highly admixed with, members of a subsequent migration event.

modern human origins | human evolution | genome diversity | cranial diversity | SNPs

Weaver 2014
Timothy D. Weaver, *Tracing the paths of modern humans from Africa*. PNAS **111** (2014), 7170–7171.
What are the broader implications of the southern route model? Most intriguingly, it may complicate scenarios for interbreeding between expanding modern humans and Neanderthals.

Bibel

Freedman 1989
David Noel Freedman, *The Nine Commandments*, *The secret progress of Israel's sins*. Bible Review **1989**, xii, 28–37.
How can the final editor of this mighty history make the case more precise, more dramatic and more suspenseful, and at the same time provide a way through the complex details of a 600-year history from beginning to end? I believe what he did was this: Using the Decalogue as his point of departure, he portrays Israel as violating each one of the commandments directly and explicitly. Further, these commandments are violated in order, one by one. Given the fact that he has a group of books (i.e., scrolls) to deal with, he assigns, in general, one commandment and one violation to each book.

Freedman 1990
David Noel Freedman, *Jonah and the Whale*, *Did God Play a Dirty Trick on Jonah at the End?* Bible Review **1990**, viii, 26–31.
"I knew all along this is the kind of a God you are," Jonah says. Then he repeats the credo from Exodus 34:6–7—but with a difference: "I know you are a gracious and merciful God, slow to anger and abounding in steadfastness" (Jonah 4:2). But, instead of going on, as does Exodus 34:6–7, to say that God will by no means clear the guilty, Jonah substitutes instead a description of God as one who "repents of evil" (Jonah 4:2). In short, Jonah is saying, "I knew from the beginning what was going to happen; that's why I ran away." If people repent, God will repent—and that's what happened.
For Jonah, the outcome was all wrong, although Jonah has to admit that what happened was according to the new rule. My suspicion is that Jonah's sense of justice was offended. He would have said there are some things that you just cannot forgive. Polls of the American public confirm that they too hold this view, that deep down inside, human beings do not accept the real teaching of the Bible, Old or New Testament. They feel repentance is too easy, too cheap, and that even if people repent, God should be a little more careful, because with a net like that, a lot of people will slip through who shouldn't. So too Jonah. He's unhappy about it, and he says so. But he can't fight it. It happened according to the rules: The Ninevites were given a chance to repent and they did, so God changed his mind.

Greer 2012
Jonathan Greer, *Cultic practices at Tel Dan*, *Was the Northern Kingdom deviant?* Biblical Archaeology Review **38** (2012), ii, 26+67.
In addition, the Tel Dan findings suggest that the cult attributed to Jeroboam was not so deviant as is often thought. With this in mind, we may go back and read the eighth-century B.C.E. prophets who often decry the attitude of the northerners rather than their presumed aberrant cultic rites: Amos's cry to do away with the cultic festivals of the north—including their associated burnt offerings

and fellowship offerings (Amos 5:22)—assumes that the northerners were, in fact, carrying out their cultic duties with regard to Biblical law. Thanks to the bones, it now appears to have been the case.

Leval 2012
Gerard Leval, *Ancient inscription refers to birth of Israelite monarchy*. Biblical Archaeology Review **38** (2012), iii, 41–43.
Since the Qeiyafa inscription refers to an apparently new king and seems to have been written earlier than David's reign, Puech concludes that it is more likely that the ostracon refers to the establishment of Saul's rule. If Puech is correct, the Qeiyafa Ostracon is the only archaeological artifact referring to Israel's first king. And it is the earliest non-Biblical confirmation of the establishment of the Israelite monarchy.

Timm 1982
Stefan Timm, *Die Dynastie Omri, Quellen und Untersuchungen zur Geschichte Israels im 9. Jahrhundert vor Christus*. Forschungen zur Religion und Literatur des Alten und Neuen Testaments 124 (Göttingen 1982).

Westermann 1976
Claus Westermann, *Die Verheissungen an die Väter, Studien zur Vätergeschichte*. Forschungen zur Religion und Literatur des Alten und Neuen Testaments 116 (Göttingen 1976).

Biologie

Emmerich 2014
Maren Emmerich, *Biokohle macht Landwirtschaft klimafreundlicher*. Spektrum der Wissenschaft **2014**, vi, 14–16.
Auf Anbauflächen aufgebracht, speichern verkohlte Planzenabfälle nicht nur das Treibhausgas Kohlendioxid. Sie senken auch die Emissionen von Lachgas, indem sie Mikroorganismen zu dessen Abbau anregen.

Energie

Reichmuth 2014
Alex Reichmuth & Ferruccio Ferroni, *Klimakiller Solarstrom*. Weltwoche **2014**, May. 15.
Strom aus Fotovoltaik-Anlagen hilft angeblich, das Klima zu schützen. In Wahrheit ist die Umweltbilanz von Sonnenenergie verheerend. Eine ungeschönte Rechnung zeigt, dass bei Sonnenstrom sogar mehr Treibhausgase freigesetzt werden als bei Kohlestrom.

Siler-Evans 2013
Kyle Siler-Evans, Inês Lima Azevedo, M. Granger Morgan & Jay Apt, *Regional variations in the health, environmental, and climate benefits of wind and solar generation*. PNAS **110** (2013), 11768–11773.

When wind or solar energy displace conventional generation, the reduction in emissions varies dramatically across the United States. Although the Southwest has the greatest solar resource, a solar panel in New Jersey displaces significantly more sulfur dioxide, nitrogen oxides, and particulatematter than a panel in Arizona, resulting in 15 times more health and environmental benefits. A wind turbine in West Virginia displaces twice as much carbon dioxide as the same turbine in California. Depending on location, we estimate that the combined health, environmental, and climate benefits from wind or solar range from $10/MWh to $100/MWh, and the sites with the highest energy output do not yield the greatest social benefits in many cases. We estimate that the social benefits from existing wind farms are roughly 60 % higher than the cost of the Production Tax Credit, an important federal subsidy for wind energy. However, that same investment could achieve greater health, environmental, and climate benefits if it were differentiated by region.

externalities | renewable electricity | renewable energy policy | air pollution

Zucker 2014

Andreas Zucker & Timothee Hinchliffe, *Optimum sizing of PV-attached electricity storage according to power market signals, A case study for Germany and Italy*. Applied Energy **127** (2014), 141–155.

This paper investigates the business case of power storage attached to PV generation from the perspective of an aggregator trading power on wholesale markets and possibly supplying household customers. The profitability and an optimum storage configuration are determined for two European regions: Baden-Wuerttemberg in Germany and Puglia in Italy based on wholesale price data and solar irradiation data for the years 2007–2011. During this period of time and under the assumptions made, adding storage to a portfolio of PV generators would not have constituted a business case for Baden-Wuerttemberg while profitability could have been reached for Puglia. However, the return of PV-attached storage that could have been achieved in Puglia during the years 2007–2011 is below levels typically required by companies operating on wholesale markets (deregulated power generators or traders) as those market participants' capital costs are usually significantly higher than borrowing costs of the state. Storage proved to be financially more attractive in cases where severe grid constraints lead to significant levels of curtailment provided that the associated losses would not be financially compensated. This could pose a risk to any investor as grid upgrades would eventually erode the revenues. Restricting the storage to PV energy only (i.e. without the possibility to do arbitrage on markets) depresses the business case and is generally unprofitable, except but for situations of severe grid bottlenecks. The picture does not change significantly if a consumption portfolio is added. In order to reach profitability, the energy related CAPEX will have to fall to a range of 100–150 E/kW h. The optimal storage configuration depends on its usage and does not exceed 5 h of discharge at full power with the discharging power limited to 40 % of the nominal PV capacity.

Keywords: Battery storage | Energy storage | Photovoltaic | Cash flow analysis | Economical analysis

Grabung

Ortloff 2014

Charles R. Ortloff, *Water engineering at Petra (Jordan), Recreating the decision process underlying hydraulic engineering of the Wadi Mataha*

pipeline system. Journal of Archaeological Science **44** (2014), 91–97.

The water supply and distribution systems of Nabataean Petra (300 BCEe300 CE) possibly incorporate traces of hydraulic engineering knowledge gathered through interaction with cities of the ancient Mediterranean and the Orient. While the degree of utilization of available knowledge is not known, the rough mountainous terrain interlaced with many deep wadis, distant spring water sources and low seasonal rainfall availability (Laureano, 2005) presented water supply problems requiring unique innovations from Nabataean engineers to maintain year-round water supply for Petra's population. From water transport solutions developed over centuries as well as technology possible borrowings from outside sources, successful hydraulic design choices were made by Nabataean engineers to optimize water transport to the city's urban core. This paper explores a number of design choices available to Nabataean engineers for the design and construction of the Wadi Mataha pipeline system prior to its construction. Given that the final design choice had sophisticated features indicative of advanced hydraulic knowledge, there is indication of a well-developed knowledge base supporting the final design choice. To explore aspects of several design options and provide insight into the Nabataean use of hydraulic design principles, computational fluid dynamics (CFD) methods are used to model several pipeline design options to visualize hydraulic phenomena occurring for different pipeline system design options. CFD refers to finite-difference, numerical solutions of the governing fluid mechanics equations applied to water flow within pipeline networks. The CFD results demonstrate fluid mechanics phenomena, presumably known to Nabataean engineers through prior observation or borrowed knowledge, supporting their final design choice. CFD results then provides insight into the civil engineering knowledge available to their engineers. Given that the Wadi Mataha pipeline design is close to a design obtained using western technology developed 2000 years later, observation of water flow patterns and flow rates under different pipeline slope conditions must have been a vital part of their engineering knowledge base given its importance to the life of the city. Given the limited survival rate of documents related to ancient water technology, the present paper provides an alternate path of discovery of the decision process behind ancient Nabataean engineering decision making and adds a chapter to the history of hydraulic science.

Keywords: Petra | Water supply | Pipelines | Hydraulic engineering

Isotope

Fenner 2014

Jack N. Fenner & Lori E. Wright, *Revisiting the strontium contribution of sea salt in the human diet.* Journal of Archaeological Science **44** (2014), 99–103.

Sea salt is getting increasing attention as a potential source of strontium incorporated into human tissues. One particularly interesting instance was published by one of us in 2005 in which sea salt was proposed as a possible reason why the stable strontium isotope ratios of ancient Maya human tooth enamel from Tikal, Guatemala, did not match the expected local strontium isotope signature. We revisit that analysis and identify a calculation error that led to an underestimate of the amount of salt required. Our revised mixing model increases the amount of salt required by 51 percent. We consider the implications of this for the case of the ancient Maya at Tikal and also discuss application of the mixing model in other circumstances.

Keywords: Sea salt | Strontium isotope ratio | Tikal | Maya | Maize | Yucatan

Judentum

Corbett 2011

Joey Corbett, *New Synagogue Excavations in Israel and Beyond.* Biblical Archaeology Review **37** (2011), iv, 52–59.

Taken together, the synagogue discoveries at Magdala, Wadi Hamam and Horvat Kur are providing archaeologists with fresh insights into how the Jewish communities of the Galilee, augmented by refugees from Jerusalem, developed and thrived in the centuries following the Roman destruction of the Jerusalem Temple.

Jungpaläolithikum

Riel-Salvatore 2010

Julien Riel-Salvatore, *A Niche Construction Perspective on the Middle–Upper Paleolithic Transition in Italy.* Journal of Archaeological Method and Theory **17** (2010), 323–355.

This paper presents an overview of the Middle–Upper Paleolithic transition in Italy in light of recent research on the Uluzzian technocomplex and on the paleoecological context of the transition. Drawing on the realization that human niche construction can be documented in the pre-agricultural archaeological record, niche construction theory is used as a conceptual framework to tie together facets of the behavioral, biological, and ecological dimensions of the transition interval into formal models of their interaction over time and in diverse contexts. Ultimately, this effort shows how foragers of the transitional interval in the Italian peninsula were active agents in shaping their evolutionary history, with consequences of some adaptive systems being felt only much later and directing the forces responsible for the ultimate disappearance of the Mousterian and Uluzzian technocomplexes in favor of the proto-Aurignacian industry, the exact nature of which clearly appears to vary on a regional level.

Keywords: Niche construction theory | Italy | Middle–Upper Paleolithic transition | Neanderthals | Homo sapiens | Lithic technology | Mobility strategies | Subsistence strategies

Klima

Roberts 2014

C. D. Roberts, L. Jackson & D. McNeall, *Is the 2004–2012 reduction of the Atlanticmeridional overturning circulation significant?* Geophysical Research Letters (2014), preprint, 1–7. DOI:10.1002/2014GL059473.

GeoResLet2014-Roberts-Supplement.pdf

The Atlantic meridional overturning circulation (AMOC) at 26.5N weakened by -0.53 sverdrup (Sv)/yr between April 2004 and October 2012. To assess whether this trend is consistent with the expected "gnoise" in the climate system, we compare the observed trend with estimates of internal variability derived from 14 control simulations from the Climate Model Intercomparison Project 5 (CMIP5). Eight year trends of -0.53 Sv/yr are relatively common in two models but are extremely unusual (or out of range) in the other 12. However, all 14 models underestimate AMOC variability on interannual time scales. To account for this bias, we estimate plausible upper limits of internal AMOC variability by combining the temporal correlation characteristics of the AMOC from CMIP5 models with an

observational estimate of interannual variability. We conclude that the observed AMOC trend is not signicantly dierent ($p > 0.01$) from plausible estimates of internal variability. Detecting the inuence of external climate forcings on the AMOC will require more than one decade of continuous observations.

Schiermeier 2014

Quirin Schiermeier, *Atlantic current strength declines.* nature **509** (2014), 270–271.

But more data are needed to indicate whether the slowing is a result of human-induced climate change.

When he and his team adjusted the models to incorporate more-realistic natural fluctuations, the downward trend was statistically in line with the expected variations. Even if the slowing continues at the current rate, the trend will not differ significantly from plausible estimates of natural variability for 18 more years, the team concluded. But it will take at least 10 more years of continuous observation to detect any influence of man-made climate-change effects, says Roberts.

Smeed 2014

D. A. Smeed et al., *Observed decline of the Atlantic meridional overturning circulation 2004–2012.* Ocean Science **10** (2014), 29–38.

D. A. Smeed, G. D. McCarthy, S. A. Cunningham, E. Frajka-Williams, D. Rayner, W. E. Johns, C. S. Meinen, M. O. Baringer, B. I. Moat, A. Duchez & H. L. Bryden

The Atlantic meridional overturning circulation (AMOC) has been observed continuously at 26“ N since April 2004. The AMOC and its component parts are monitored by combining a transatlantic array of moored instruments with submarine-cable-based measurements of the Gulf Stream and satellite derived Ekman transport. The time series has recently been extended to October 2012 and the results show a downward trend since 2004. From April 2008 to March 2012, the AMOC was an average of 2.7 Sv (1 Sv = 106 m3 s-1) weaker than in the first four years of observation (95 % confidence that the reduction is 0.3 Sv or more). Ekman transport reduced by about 0.2 Sv and the Gulf Stream by 0.5 Sv but most of the change (2.0 Sv) is due to the mid-ocean geostrophic flow. The change of the mid-ocean geostrophic flow represents a strengthening of the southward flow above the thermocline. The increased southward flow of warm waters is balanced by a decrease in the southward flow of lower North Atlantic deep water below 3000 m. The transport of lower North Atlantic deep water slowed by 7 % per year (95 % confidence that the rate of slowing is greater than 2.5 % per year).

Methoden

Linstädter 2001

Jörg Linstädter, Jürgen Richter & Anja Linstädter, *Optimale Datenerhebung mit minimalem Aufwand.* Archäologische Informationen **25** (2001), 1–22.

Optimale Datenerhebung mit geringstmöglichem Aufwand ist ein alter Archäologentraum. Um ihn zu verwirklichen, werden in der Regel repräsentative Stichproben gezogen. Repräsentativität ist, vereinfacht gesagt, dann gegeben, wenn die Auswertung einer Stichprobe (zum Beispiel einer begrenzten Anzahl archäologischer Objekte aus einem großen Inventar) dieselbe Aussage ergibt wie die Auswertung aller Objekte des gesamten Inventars. Sobald eine Stichprobe so umfangreich ist, daß sie repräsentativ für die Grundgesamtheit ist, kann die Aufnahme weiterer Daten unterbleiben.

Mittelpaläolithikum

Dayet 2014

Laure Dayet, Francesco d'Errico & Renata Garcia-Moreno, *Searching for consistencies in Châtelperronian pigment use*. Journal of Archaeological Science **44** (2014), 180–193.

JAS044-0180-Supplement1.pdf, JAS044-0180-Supplement2.pdf, JAS044-0180-Supplement3.pdf

Evidence supporting the hypothesis that Neanderthals developed cultural adaptations comparable to those associated with the Upper Palaeolithic is controversial, and come from a handful of sites, mainly attributed to the Châtelperronian. Pigments play a growing role in this debate. We present a critical review of available information on Châtelperronian pigment use, and submit pigment lumps from three Châtelperronian sites, Roc-de-Combe (Lot), Le Basté, and Bidart (Pyrénées Atlantiques) to a microscopic, elemental and mineralogical analysis using multifocus optical microscopy, SEM-EDS, XRF, Raman, and µXRD techniques. The thirty-nine pigment lumps from Roc-de-Combe consist of a great variety of red and black iron and manganese oxide rich rocks, probably collected at close and relatively distant sources. A third of the pieces from Roc-de-Combe and one piece from Bidart and Le Basté bear percussion marks and facets produced by grinding. Our results demonstrate that a consistent use of pigments, interpreted as reflecting site function, occurs at sites located in the South-western area of the known distribution of the Châtelperronian. Considering that this area is distant from the location of the earliest Proto-Aurignacian and Early Aurignacian sites from Germany and Austria, and that available radiocarbon dating indicate a chronological anteriority of Roc-de-Combe Châtelperronian, we argue that the hypothesis that Châtelperronian pigment use results from Neanderthal 'acculturation' is improbable.

Keywords: Paleolithic | Neanderthal | Iron oxides | Manganese oxides | Portable XRF | µ-XRD | SEM-EDS

Richter 2000

Jürgen Richter, *Social memory among late Neanderthals*. In: Jörg Orschiedt & Gerd-Christian Weniger) (Hrsg.), *Neanderthals and Modern Humans – Discussing the Transition, Central and Eastern Europe from 50.000 – 30.000 B.P.* Wissenschaftliche Schriften des Neanderthal Museums 2 (Mettmann 2000), 123–132.

Between the first and the second glacial maximum (i.e. between 60.000 and 28.000 B.P., Oxygen Isotope Stage 3) a patchwork of different social memory units occurred in Central and Eastern Europe. The exchange of information becomes evident within well defined but flexible boundaries. It is the first time in the history of man in Europe that some typological features can be securely attributed to a specific time range and region of origin. A comparison of three major stratigraphies shows that technological features are superimposed on typological features. Artefacts began to represent their makers, thus indicating entities of social memory and lines of tradition. Hence, early OIS 3 Neanderthal behaviour seems to prepare the emergence of the European Upper Palaeolithic during late OIS 3.

Shahack-Gross 2014

R. Shahack-Gross, F. Berna, P. Karkanas, C. Lemorini, A. Gopher & R. Barkai, *Evidence for the repeated use of a central hearth at Middle Pleistocene (300 ky ago) Qesem Cave, Israel*. Journal of Archaeological Science **44** (2014), 12–21.

A major debate in prehistory revolves around the time and place of the earliest habitual use of fire and the hominin species responsible for it. Here we present a newly discovered hearth at Qesem Cave (Israel) that was repeatedly used and was the focus of hearth-centered human activities, as early as threehundredthousand years ago. The hearth, identified based on mineralogical and microscopic criteria, contains two superimposed use cycles, each composed of shorter episodes – possibly the earliest superimposed hearth securely identified to date. The hearth covers ca. 4 m2 in area making it a uniquely large hearth in comparison to any contemporaneous hearth identified thus far, possibly indicating it has been used by a relatively large group of people. In addition, the hearth is located in the center of the cave and is associated with butchered animal remains and a dense flint assemblage. The flint assemblage indicates spatially differentiated meat cutting and hide working activity areas. The central location of the hearth within the cave and the activities associated with it may reflect an embedded perception of space organization of the Qesem Cave inhabitants. Since fire was habitually used throughout the 420–200 ky sequence of Qesem Cave, where preservation conditions are alike throughout, we suggest that this unique hearth may reflect a development in nature and most probably in the intensity of fire use in Qesem Cave, from ca. 300 ka ago onwards.

Keywords: Hearth | Habitual use of fire | Micromorphology | Middle Pleistocene | Qesem Cave

Ostasien

Bleed 2010

Peter Bleed & Akira Matsui, *Why Didn't Agriculture Develop in Japan? A Consideration of Jomon Ecological Style, Niche Construction, and the Origins of Domestication*. Journal of Archaeological Method and Theory **17** (2010), 356–370.

Over the course of some 12,000 years, Jomon cultures developed a highly refined adjustment to the Japanese landscape. Japanese archaeologists have exposed Jomon culture in great detail, but because it rested on wild resources, the Jomon era attracts little worldwide archaeological interest. This paper discusses Jomon ecological style in light of niche construction theory to consider the conditions that gave rise to agriculture and domestication. Jomon communities clearly managed much of their landscape and many plant and animal populations. Drawing on ideas from niche construction theory, we argue that qualities of potential domesticates are a central factor in the development of agriculture.

Keywords: Niche construction | Agricultural origins | Jomon | Japan

Lu 2005

Houyuan Lu, Xiaoyan Yang, Maolin Ye, Kam-Biu Liu, Zhengkai Xia, Xiaoyan Ren, Linhai Cai, Naiqin Wu & Tung-Sheng Liu, *Millet noodles in Late Neolithic China*. nature **437** (2005), 967–968.

n437-0967-Supplement1.ppt, n437-0967-Supplement2.pdf

A remarkable find allows the reconstruction of the earliest recorded preparation of noodles. Unlike modern Italian pasta and Asian noodles, which are generally made from durum wheat (tetraploid) and bread wheat (hexaploid), respectively, the prehistoric noodles show no evidence that wheat, barley or other non-grass plants were used to supply their ingredients. Our findings support the belief that early plant domestication and food production relied on millet crops in the semi-arid Loess Plateau region of China.

Religion

Flasch 2013
Kurt Flasch, *Warum ich kein Christ bin*, *Bericht und Argumentation.* (München 2013).