Liste erstellt am 2013-05-05

Literatur

Aktuell

Boslough 2013

Mark Boslough, *Faulty protocols yield contaminated samples, unconfirmed results*. PNAS **110** (2013), E1651.

One microspherule was dated and yielded a radiocarbon age of 207 ± 87 y BP. This result suggests that A. West's protocols and sample preparation methods do not eliminate contaminants that are unrelated to the YDB or to an impact.

Flowers 2012

R. M. Flowers & K. A. Farley, *Apatite ^{4}He/^{3}He and (U-Th)/He Evidence for an Ancient Grand Canyon*. science **338** (2012), 1616–1619.

s338-1616-Supplement.pdf

The Grand Canyon is one of the most dramatic features on Earth, yet when and why it was carved have been controversial topics for more than 150 years. Here, we present apatite 4He/3He thermochronometry data from the Grand Canyon basement that tightly constrain the near-surface cooling history associated with canyon incision. 4He/3He spectra for eastern Grand Canyon apatites of differing He date, radiation damage, and U-Th zonation yield a self-consistent cooling history that substantially validates the He diffusion kinetic model applied here. Similar data for the western Grand Canyon provide evidence that it was excavated to within a few hundred meters of modern depths by ≈70 million years ago (Ma), in contrast to the conventional model in which the entire canyon was carved since 5 to 6 Ma.

Flowers 2013

R. M. Flowers & K. A. Farley, *Response to Comments on "Apatite ^{4}He/^{3}He and (U-Th)/He Evidence for an Ancient Grand Canyon"*. science **340** (2013), 143.

We reiterate that geological observations do not require Grand Canyon carving coeval with Colorado River integration. (U-Th)/He data from the western canyon, totaling 29 reproducible analyses from six samples and two labs, compellingly support an ancient canyon. Three dispersed analyses from one anomalous sample do not refute this conclusion, nor do the claimed shortcomings of our modeling have validity.

Karlstrom 2013

Karl E. Karlstrom et al., *Comment on "Apatite ^{4}He/^{3}He and U-Th)/He Evidence for an Ancient Grand Canyon"*. science **340** (2013), 143.

Karl E. Karlstrom, John Lee, Shari Kelley, Ryan Crow, Richard A. Young, Ivo Lucchitta, L. Sue Beard, Rebecca Dorsey, Jason W. Ricketts, William R. Dickinson & Laura Crossey

Flowers and Farley (Reports, 21 December 2012, p. 1616; published online 29 November 2012) propose that the Grand Canyon is 70 million years old. Starkly

contrasting models for the age of the Grand Canyon—70 versus 6 million years—-can be reconciled by a shallow paleocanyon that was carved in the eastern Grand Canyon 25 to 15 million years ago (Ma), negating the proposed 70 Ma and 55 Ma paleocanyons. Cooling models and geologic data are most consistent with a 5 to 6 Ma age for western Grand Canyon and Marble Canyon.

LeCompte 2013

Malcolm A. LeCompte et al., *Prior studies validating research are ignored, Reply to Boslough*. PNAS **110** (2013), E1652.
Malcolm A. LeCompte, Dale Batchelor, Mark N. Demitroff, Edward K. Vogel, Charles Mooney, Barrett N. Rock & Alfred W. Seidel
Our report's primary purpose was to resolve the conflicting results of two spherule studies. Like other investigators, we found Firestone et al.'s results to be reproducible, whereas Surovell et al.'s were not.We also found it irrefutable that Surovell et al. did not follow the prescribed protocol, with fatal results. However, we took a neutral position on the YDB impact hypothesis: "Our results are consistent with, but do not prove, that a previously proposed cosmic impact occurred at 12.9 ka BP. The ultimate source of the magnetic microspherules in YDB sediment remains a mystery warranting further investigation".

Lucchitta 2013

Ivo Lucchitta, *Comment on "Apatite $^4He/^3He$ and (U-Th)/He Evidence for an Ancient Grand Canyon"*. science **340** (2013), 143.
Flowers and Farley (Reports, 21 December 2012, p. 1616; published online 29 November 2012) use thermochronometry to propose that the western paleo–Grand Canyon was nearly as deep 70 million years ago (Ma) as today. However, lithologies, facies relations, geomorphology, and paleotopography of Miocene interior-basin deposits near the mouth of the Grand Canyon show that no paleocanyon existed in that area during filling of the basin, ≈17 to ≈5 Ma.

Mouritsen 2013

Henrik Mouritsen, Rachael Derbyshire, Julia Stalleicken, Ole Ø. Mouritsen, Barrie J. Frost & D. Ryan Norris, *An experimental displacement and over 50 years of tag-recoveries show that monarch butterflies are not true navigators*. PNAS **110** (2013), 7348–7353.
Monarch butterflies (Danaus plexippus) breeding in eastern North America are famous for their annual fall migration to their overwintering grounds in Mexico. However, the mechanisms they use to successfully reach these sites remain poorly understood. Here, we test whether monarchs are true navigators who can determine their location relative to their final destination using both a "compass" and a "map". Using flight simulators, we recorded the orientation of wild-caught monarchs in southwestern Ontario and found that individuals generally flew in a southwest direction toward the wintering grounds. When displaced 2,500 km to the west, the same individuals continued to fly in a general southwest direction, suggesting that monarchs use a simple vector-navigation strategy (i.e., use a specific compass bearing without compensating for displacement). Using over 5 decades of field data, we also show that the directional concentration and the angular SD of recoveries from tagged monarchs largely conformed to two mathematical models describing the directional distribution of migrants expected under a vector-navigation strategy. A third analysis of tagged recoveries shows that the increasing directionality of migration from north to south is largely because of the presence of geographic barriers that guide individuals toward overwintering sites. Our work

suggests that monarchs breeding in eastern North America likely combine simple orientation mechanisms with geographic features that funnel them toward Mexican overwintering sites, a remarkable achievement considering that these butterflies weigh less than a gram and travel thousands of kilometers to a site they have never seen.
mark-recapture | clock-and-compass orientation | numerical model | analytical expectation model | longitudinal displacement

Wadman 2013

Meredith Wadman, *The Gun Fighter*. nature **496** (2013), 412–415.
There are almost as many firearms in the United States as there are citizens. Garen Wintemute is one of few people studying the consequences.

Wilson 2013

David Wilson & Anna Wilson, *Figs as a Global Spiritual and Material Resource for Humans*. Human Ecology (2013), preprint, 1–6. DOI:10.1007/s10745-013-9582-z.
Despite our examples spanning the global distribution of figs and a wide range of different fig species, the same views and uses of figs occur repeatedly. While figs are undoubtedly important as a food source, they also provide vital spiritual, health and functional roles to humans throughout their distribution.

Anthropologie

Berger 2013

Lee R. Berger, *The Mosaic Nature of Australopithecus sediba, Overview*. science **340** (2013), 163.
The six articles presented in full in the online edition of Science (www.sciencemag.org/site/extra/sediba), with abstracts in print (pp. 164–165), complete the initial examination of the prepared material attributed to three individuals: the holotype and paratype skeletons, commonly referred to as MH1 and MH2, and the adult isolated tibia referred to as MH4. They, along with the cumulative research published over the past 3 years, provide us with a comprehensive examination of the anatomy of a single species of early hominin.

Churchill 2013

Steven E. Churchill et al., *The Upper Limb of Australopithecus sediba*. science **340** (2013), 164. DOI:10.1126/science.1233477.
s340-0164a-Supplement.pdf
Steven E. Churchill, Trenton W. Holliday, Kristian J. Carlson, Tea Jashashvili, Marisa E. Macias, Sandra Mathews, Tawnee L. Sparling, Peter Schmid, Darryl J. de Ruiter & Lee R. Berger
The evolution of the human upper limb involved a change in function from its use for both locomotion and prehension (as in apes) to a predominantly prehensile and manipulative role. Well-preserved forelimb remains of 1.98-million-year-old Australopithecus sediba from Malapa, South Africa, contribute to our understanding of this evolutionary transition. Whereas other aspects of their postcranial anatomy evince mosaic combinations of primitive (australopith-like) and derived (Homo-like) features, the upper limbs (excluding the hand and wrist) of the Malapa hominins are predominantly primitive and suggest the retention of substantial

climbing and suspensory ability. The use of the forelimb primarily for prehension and manipulation appears to arise later, likely with the emergence of Homo erectus.

DeSilva 2013

Jeremy M. DeSilva et al., *The Lower Limb and Mechanics of Walking in Australopithecus sediba*. science **340** (2013), 164. DOI:10.1126/science.1232999.

s340-0164c-Supplement.pdf

Jeremy M. DeSilva, Kenneth G. Holt, Steven E. Churchill, Kristian J. Carlson, Christopher S. Walker, Bernhard Zipfel & Lee R. Berger

The discovery of a relatively complete Australopithecus sediba adult female skeleton permits a detailed locomotor analysis in which joint systems can be integrated to form a comprehensive picture of gait kinematics in this late australopith. Here we describe the lower limb anatomy of Au. sediba and hypothesize that this species walked with a fully extended leg and with an inverted foot during the swing phase of bipedal walking. Initial contact of the lateral foot with the ground resulted in a large pronatory torque around the joints of the foot that caused extreme medial weight transfer (hyperpronation) into the toe-off phase of the gait cycle (late pronation). These bipedal mechanics are different from those often reconstructed for other australopiths and suggest that there may have been several forms of bipedalism during the Plio-Pleistocene.

Eimer 2012

Martin Eimer, Angela Gosling & Bradley Duchaine, *Electrophysiological markers of covert face recognition in developmental prosopagnosia*. Brain **135** (2012), 542–554.

To study the existence and neural basis of covert face recognition in individuals with developmental prosopagnosia, we tested a group of 12 participants with developmental prosopagnosia in a task that required them to judge the familiarity of successively presented famous or non-famous faces. Electroencephalography was recorded during task performance, and event-related brain potentials were computed for recognized famous faces, non-recognized famous faces and non-famous faces. In six individuals with developmental prosopagnosia, non-recognized famous faces triggered an occipito-temporal N250 component, which is thought to reflect the activation of stored visual memory traces of known individual faces. In contrast to the N250, the P600f component, which is linked to late semantic stages of face identity processing, was not triggered by non-recognized famous faces. Event-related potential correlates of explicit face recognition obtained on those few trials where participants with developmental prosopagnosia classified famous faces as known or familiar, were similar to the effects previously found in participants with intact face recognition abilities, suggesting that face recognition mechanisms in individuals with developmental prosopagnosia are not qualitatively different from that of unimpaired individuals. Overall, these event-related potential results provide the first neurophysiological evidence for covert face recognition in developmental prosopagnosia, and suggest this phenomenon results from disconnected links between intact identity-specific visual memory traces and later semantic face processing stages. They also imply that the activation of stored visual representations of familiar faces is not sufficient for conscious explicit face recognition.

Keywords: face processing; face recognition; prosopagnosia; event-related brain potentials; visual cognition

Garcia 2007

Ada L. Garcia et al., *Long-term strict raw food diet is associated with favourable plasma β-carotene and low plasma lycopene concentrations in Germans*. British Journal of Nutrition **99** (2007), 1293–1300.

Ada L. Garcia, Corinna Koebnick, Peter C. Dagnelie, Carola Strassner, Ibrahim Elmadfa, Norbert Katz, Claus Leitzmann & Ingrid Hoffmann

Dietary carotenoids are associated with a reduced risk of chronic diseases. Raw food diets are predominantly plant-based diets that are practised with the intention of preventing chronic diseases by virtue of their high content of beneficial nutritive substances such as carotenoids. However, the benefit of a long-term adherence to these diets is controversial since little is known about their adequacy. Therefore, we investigated vitamin A and carotenoid status and related food sources in raw food diet adherents in Germany. Dietary vitamin A, carotenoid intake, plasma retinol and plasma carotenoids were determined in 198 (ninety-two male and 106 female) strict raw food diet adherents in a cross-sectional study. Raw food diet adherents consumed on average 95 weight % of their total food intake as raw food (approximately 1800 g/d), mainly fruits. Raw food diet adherents had an intake of 1301 retinol activity equivalents/d and 16 • 7 mg/d carotenoids. Plasma vitamin A status was normal in 82 % of the subjects (≥1.05mmol/l) and 63 % had b-carotene concentrations associated with chronic disease prevention (≥0.88 mmol/l). In 77 % of subjects the lycopene status was below the reference values for average healthy populations (<0.45mmol/l). Fat contained in fruits, vegetables and nuts and oil consumption was a significant dietary determinant of plasma carotenoid concentrations (b-carotene r 0.284; P<0.05; lycopene r 0.168; P=0.024). Long-term raw food diet adherents showed normal vitamin A status and achieve favourable plasma b-carotene concentrations as recommended for chronic disease prevention, but showed low plasma lycopene levels. Plasma carotenoids in raw food adherents are predicted mainly by fat intake.

Carotenoids | Vitamin A | Raw food diet

Gibbons 2013

Ann Gibbons, *A Human Smile and Funny Walk for Australopithecus sediba*. science **340** (2013), 132–133.

More will be coming: The remainder of the defining type specimen of Au. sediba still lies inside a rock, waiting to be excavated. Berger's team plans to return to Malapa to begin digging for new fossils this summer.

Irish 2013

Joel D. Irish, Debbie Guatelli-Steinberg, Scott S. Legge, Darryl J. de Ruiter & Lee R. Berger, *Dental Morphology and the Phylogenetic "Place" of Australopithecus sediba*. science **340** (2013), 164. DOI:10.1126/science.1233062.

s340-0164d-Supplement.pdf

To characterize further the Australopithecus sediba hypodigm, we describe 22 dental traits in specimens MH1 and MH2. Like other skeletal elements, the teeth present a mosaic of primitive and derived features. The new nonmetric data are then qualitatively and phenetically compared with those in eight other African hominin samples, before cladistic analyses using a gorilla outgroup. There is some distinction, largely driven by contrasting molar traits, from East African australopiths. However, Au. sediba links with Au. africanus to form a South African australopith clade. These species present five apomorphies, including shared expressions of Carabelli's upper first molar (UM1) and protostylid lower first molar

(LM1). Five synapomorphies are also evident between them and monophyletic Homo habilis/rudolfensis + H. erectus. Finally, a South African australopith + Homo clade is supported by four shared derived states, including identical LM1 cusp 7 expression.

Kubo 2013

Daisuke Kubo, Reiko T. Kono & Yousuke Kaifu, *Brain size of Homo floresiensis and its evolutionary implications*. Proc. Royal Society B (2013), preprint, 1–8. DOI:10.1098/rspb.2013.0338.

ProcRSocB2013-preprint-Supplement0430.pdf

The extremely small endocranial volume (ECV) of LB1, the type specimen of Homo floresiensis, poses a challenge in our understanding of human brain evolution. Some researchers hypothesize dramatic dwarfing of relative brain size from Homo erectus presumably without significant decrease in intellectual function, whereas others expect a lesser degree of brain diminution from a more primitive, small-brained form of hominin currently undocumented in eastern Asia. However, inconsistency in the published ECVs for LB1 (380–430 cc), unclear human intraspecific brain–body size scaling and other uncertainties have hampered elaborative modelling of its brain size reduction. In this study, we accurately determine the ECV of LB1 using high-resolution micro-CT scan. The ECV of LB1 thus measured, 426 cc, is larger than the commonly cited figure in previous studies (400 cc). Coupled with brain–body size correlation in Homo sapiens calculated based on a sample from 20 worldwide modern human populations, we construct new models of the brain size reduction in the evolution of H. floresiensis. The results show a more significant contribution of scaling effect than previously claimed.

Keywords: Homo floresiensis, endocranial volume, relative brain size, brain–body scaling

Renzi 2013

Chiara Renzi, Susanna Schiavi, Claus-Christian Carbon, Tomaso Vecchi, Juha Silvanto & Zaira Cattaneo, *Processing of featural and configural aspects of faces is lateralized in dorsolateral prefrontal cortex, A TMS study*. NeuroImage **74** (2013), 45–51.

Facial recognition relies on distinct and parallel types of processing: featural processing focuses on the individual components of a face (e.g., the shape or the size of the eyes), whereas configural (or "relational") processing considers the spatial interrelationships among the single facial components (e.g., distance of the mouth from the nose). Previous neuroimaging evidence has suggested that featural and configural processes may rely on different brain circuits. By using rTMS, here we show for the first time a double dissociation in dorsolateral prefrontal cortex for different aspects of face processing: in particular, TMS over the left middle frontal gyrus (BA8) selectively disrupted featural processing, whereas TMS over the right inferior frontal gyrus (BA44) selectively interferedwith configural processing of faces. By establishing a causal link between activation in left and right prefrontal areas and differentmodes of face processing, our data extend previous neuroimaging evidence andmay have important implications in the study of face-processing deficits, such as those manifested in prosopagnosia and autistic spectrum disorders.

Keywords: Faces | Configural | Featural | Right inferior frontal gyrus | Left middle frontal gyrus | rTMS

de Ruiter 2013

Darryl J. de Ruiter et al., *Mandibular Remains Support Taxonomic Validity of Australopithecus sediba*. science **340** (2013), 164. DOI:10.1126/science.1232997.

s340-0164b-Supplement.pdf

Darryl J. de Ruiter, Thomas J. DeWitt, Keely B. Carlson, Juliet K. Brophy, Lauren Schroeder, Rebecca R. Ackermann, Steven E. Churchill & Lee R. Berger

Since the announcement of the species Australopithecus sediba, questions have been raised over whether the Malapa fossils represent a valid taxon or whether inadequate allowance was made for intraspecific variation, in particular with reference to the temporally and geographically proximate species Au. africanus. The morphology of mandibular remains of Au. sediba, including newly recovered material discussed here, shows that it is not merely a late-surviving morph of Au. africanus. Rather—as is seen elsewhere in the cranium, dentition, and postcranial skeleton—these mandibular remains share similarities with other australopiths but can be differentiated from the hypodigm of Au. africanus in both size and shape as well as in their ontogenetic growth trajectory.

Schmid 2013

Mosaic Morphology in the Thorax of Australopithecus sediba. science **340** (2013), 164. DOI:10.1126/science.1234598.

s340-0164e-Supplement.pdf

Peter Schmid, Steven E. Churchill, Shahed Nalla, Eveline Weissen, Kristian J. Carlson, Darryl J. de Ruiter & Lee R. Berger

The shape of the thorax of early hominins has been a point of contention for more than 30 years. Owing to the generally fragmentary nature of fossil hominin ribs, few specimens have been recovered that have rib remains complete enough to allow accurate reassembly of thoracic shape, thus leaving open the question of when the cylindrical-shaped chest of humans and their immediate ancestors evolved. The ribs of Australopithecus sediba exhibit a mediolaterally narrow, ape-like upper thoracic shape, which is unlike the broad upper thorax of Homo that has been related to the locomotor pattern of endurance walking and running. The lower thorax, however, appears less laterally flared than that of apes and more closely approximates the morphology found in humans.

Williams 2013

Scott A. Williams, Kelly R. Ostrofsky, Nakita Frater, Steven E. Churchill, Peter Schmid & Lee R. Berger, *The Vertebral Column of Australopithecus sediba*. science **340** (2013), 164. DOI:10.1126/science.1232996.

s340-0164f-Supplement.pdf

Two partial vertebral columns of Australopithecus sediba grant insight into aspects of early hominin spinal mobility, lumbar curvature, vertebral formula, and transitional vertebra position. Au. sediba likely possessed five non–rib-bearing lumbar vertebrae and five sacral elements, the same configuration that occurs modally in modern humans. This finding contrasts with other interpretations of early hominin regional vertebral numbers. Importantly, the transitional vertebra is distinct from and above the last rib-bearing vertebra in Au. sediba, resulting in a functionally longer lower back. This configuration, along with a strongly wedged last lumbar vertebra and other indicators of lordotic posture, would have contributed to a highly flexible spine that is derived compared with earlier members of the genus Australopithecus and similar to that of the Nariokotome Homo erectus skeleton.

Bibel

Klawans 2012

Jonathan Klawans, *Was Jesus' Last Supper a Seder?* Bible History Daily **2012**, Oct. 18. <http://www.biblicalarchaeology.org/daily/people-cultures-in-the-bible/jesus-historical-jesus/was-jesus-last-supper-a-seder/> (2013-04-03).

This process of Passoverization did not end with the New Testament. The second-century bishop Melito of Sardis (in Asia Minor) once delivered a widely popular Paschal sermon, which could well be called a "Christian Haggadah," reflecting at great length on the various connections between the Exodus story and the life of Jesus.

Passoverization can even be found in the Middle Ages. Contrary to popular belief, the Catholic custom of using unleavened wafers in the Mass is medieval in origin. The Orthodox churches preserve the earlier custom of using leavened bread.26

Is it not possible to see the switch from using leavened to unleavened bread as a "Passoverization" of sorts?

Was the Last Supper a Passover Seder? Most likely, it was not.

Datierung

Betancourt 1998

Philip P. Betancourt, *The Chronology of the Aegean Late Bronze Age, Unanswered Questions.* In: Miriam S. Balmuth & Robert H. Tykot (Hrsg.), *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean, Proceedings of 'Sardinian Stratigraphy and Mediterranean Chronology', Tufts University, Medford, MA, March 17–19, 1995.* Studies in Sardinian Archaeology 5 (Oxford 1998), 291–296.

These pieces of evidence suggest a chronology such as is shown in Fig. 29.3. A major point is the length of LM IB (and the contemporary LH IIA). This period was originally assigned a length of only 50 years by Evans (1921-35: IV, 881). Although it was not well represented in his excavations at Knossos, other sites have shown it is a substantial period with several architectural phases and an enormous volume of ceramics. Its total length is difficult to judge, but it must surely be well over a century. At Pseira, for example, it is represented by several building phases, and it is long enough to incorporate changes in architectural style. The large quantities of LM IB pottery and other objects suggest it is longer than LM IA.

The problem is that the discovery of the absolute dates is not as important as the question of the relative chronology. For historical conclusions, moving an event a hundred years forward or back in time is not as important at our present level of knowledge as understanding its relevance to other events from approximately the same time.

Radiocarbon dating operates the same way in the Central Mediterranean as it does in the Eastern Mediterranean. In comparison with the "late chronology" of the Aegean, radiocarbon dates always suggest an earlier trend. One cannot mix one's classes of evidence and date Mycenae and Crete based on the traditional chronology of Egyptian synchronisms and the rest of Europe based on the radiocarbon dates, and then draw meaningful conclusions. For parts of Europe and the

Mediterranean that are themselves dated by radiocarbon, one must use the "high Aegean chronology" in order to understand the proper historical correlations.

Bietak 1998

Manfred Bietak, *The Late Cypriot White Slip I Ware as an Obstacle to the High Aegean Chronology*. In: Miriam S. Balmuth & Robert H. Tykot (Hrsg.), *Sardinian and Aegean Chronology: Towards the Resolution of Relative and Absolute Dating in the Mediterranean, Proceedings of 'Sardinian Stratigraphy and Mediterranean Chronology', Tufts University, Medford, MA, March 17–19, 1995.* Studies in Sardinian Archaeology 5 (Oxford 1998), 321–321.

Therefore I see little or no chance for the high Aegean chronology to last. No proof has been produced so far that the Theran eruption is responsible for the 1628 BC tree ring anomaly. One kind of proof would be the identification of the origin of particles of volcanic ash from dated Greenland ice deposits by scientific methods. Another kind would be to probe for volcanic ash in Egyptian stratigraphic deposits. Both possibilities will be exploited in the near future. With the evidence of the appearance of White Slip I-Ware at Tell eI-Dabca from the early 18th Dynasty onwards, I doubt very much that samples from a deposit around 1628 BC would reveal the fingerprints of the volcano of Thera.
It will give me great pleasure to have the lines above read in 10 years!

Gerloff 1993

Sabine Gerloff, *Zu Fragen mittelmeerländischer Kontakte und absoluter Chronologie der Frühbronzezeit in Mittel- und Westeuropa*. Prähistorische Zeitschrift **68** (1993), 58–102.

Hier werden einige der längst bekannten frühbronzezeitlichen Kontaktfunde zwischen Mittel- und Westeuropa einerseits und dem Mittelmeerraum andererseits und die damit verbundenen Probleme der absoluten Chronologie einer erneuten Prüfung unterzogen. Wir können im Gegensatz zu der seit Renfrew (1968) oft vertretenen Auffassung einer Nichtgleichzeitigkeit und autochthonen Entwicklung der betreffenden Fundgüter der Stufen Reinecke Bz AI und A2 zeigen, daß ihre Zeitstellung – auch unter Berücksichtigung neuester naturwissenschaftlicher Daten – in Mittel- und Westeuropa derjenigen der mittelmeerländischen Hochkulturen zum großen Teil entspricht. Die Gegenstücke der einfachen mitteleuropäischen ‚Zyprischen' Schleifennadeln sowie der Lanzenspitze mit geschlitztem Blatt aus dem Bz A1-Hort von Kyhna in Sachsen gehören in Vorderasien vornehmlich dem spätesten Abschnitt der dortigen Frühbronzezeit (EBA 3) an und werden hier in das letzte Drittel des 3. vorchristlichen Jahrtausends datiert, die Zeit der großen trojanischen Schatzfunde aus Schicht IIg, welche ebenfalls die genannten Formen enthielten. Durch einen Vergleich der kalibrierten C14-Daten dieser Schicht mit solchen der Stufe Reinecke Bz A1 können wir zeigen, daß beide, auch durch archäologische Funde verbundene Komplexe sich zeitlich überlappen. Während die frühesten mitteleuropäischen bronzezeitlichen Ösenringe ebenfalls dieser Stufe zugeordnet werden können, müssen nach heutigem Forschungsstand die vorderasiatischen Vergleichsstücke später angesetzt werden. Sie dürften in etwa mit den mitteleuropäischen ösenringen aus der Zeit der Aunjetitzer Fürstengräber (frühe Phase von Bz A1 bzw. Übergang von Bz A1 zu A2) gleichzeitig sein, die dendrochronologisch in das frühe 2. vorchristliche Jahrtausend datiert werden. Letztere werden als zum Teil zeitgleich mit den Fürstengräbern der frühen Wessexkultur (Wessex 1) und der ihnen verwandten bretonischen Fürstengräber angesehen, die dem Übergang von der Stufe Bz A1 zur Stufe A2 und der Stufe Bz A2 zugeordnet werden. Die

hier nicht bestrittenen Kontaktfunde zwischen der Wessexkultur und den mykenischen Schachtgräbern werden mit einem späteren Abschnitt von Wessex 1 und dem Übergang von Wessex 1 zu 2 verbunden. Dieser Zeithorizont ist in Mitteleuropa mit einem Spätabschnitt der Stufe Bz A2 in Verbindung zu bringen, der nach dendrochronologischen Messungen in das ausgehende 17. und das 16. vorchristliche Jahrhundert gehört und somit auch mit den neuesten Daten für die Schachtgräber in Einklang zu bringen ist. Am Schluß unserer Darstellung versuchen wir zu zeigen, daß die reichen mittel- und westeuropäischen Zinnvorkommen wohl auch weiterhin als einer der auslösenden Faktoren für die Fernbeziehungen der ‚Barbarischen' Frühbronzezeit zu den Hochkulturen des östlichen Mittelmeerraumes gelten können. Während diese Kontakte zu Beginn der Bronzezeit (Phase A1) gegen Ende des 3. und zu Beginn des 2. Jahrtausends sich vornehmlich zwischen Mitteleuropa über die Donau in den östlichen Mittelmeerraum erstreckten, kam gegen Ende der Frühbronzezeit (Phase A2/B1), gegen Mitte des 2. Jahrtausends, der Verbindung zwischen dem atlantischen Europa und der Mykenischen Welt über das Mittelmeer eine primäre Bedeutung zu.
Der vorliegende Beitrag ist die schriftliche Fassung eines im Dezember 1991 gehaltenen Habilitationsvortrages am Fachbereich Altertumswissenschaften der Freien Universität Berlin.

Hankey 1987

Vronwy Hankey, *The chronology of the Aegean Late Bronze Age*. In: Paul Åström (Hrsg.), *High, Middle or Low? Acts of an International Colloquium on Absolute Chronology Held at the University of Gothenburg 20th – 22nd August 1987*. (Gothenburg 1987), 39–59.
This paper offers further evidence, following Hankey and Warren 1974, for conventional correlations between the Aegean, the Levant and Egypt (Anatolia Is not Included). The latest use of radiocarbon determination of age is briefly discussed. Those who have laboured in the hazardous field of chronology are asked indulgence for statements of the obvious, and some repetition of old information offered here in the context of the Colloquium on "Absolute chronology, high, middle or low?" Since the absence of written documents makes chronology of the Aegean almost entirely dependent on pottery, it is not easy to operate an overall relative dating system which satisfactorily covers exceptional cultural circumstances.

Grabung

Garfinkel 1993

Yosef Garfinkel, *The Yarmukian Culture in Israel*. Paléorient **19** (1993), i, 115–134.
Evidence accumulated in the last decade from new excavations and analysis of material from earlier excavations has broadened our understanding of the Yarmukian culture in Israel. Rounded and rectangular residential structures, some of them very large, are associated with pits which are an important component of Yarmukian sites. The Yarmukians are the first to produce pottery in this part of the Levant. A highly distinctive technique was used to adorn vessels. Flint, limestone, basalt items were extensively used. A great number of figurines show an impressive artistic achievement.

Zielhofer 2013

Christoph Zielhofer et al., *The decline of the early Neolithic population center of 'Ain Ghazal and corresponding earth-surface proces-*

ses, Jordan Rift Valley. Quaternary Research (2013), preprint, 1–15. DOI:10.1016/j.yqres.2012.08.006.

Christoph Zielhofer, Lee Clare, Gary Rollefson, Stephan Wächter, Dirk Hoffmeister, Georg Bareth, Christopher Roettig, Heike Bullmann, Birgit Schneider, Hubert Berke & Bernhard Weninger

'Ain Ghazal is among the earliest large population centers known in the Middle East. A total of four major stratigraphic cultural units have been identified: 1) The oldest Middle Pre-Pottery Neolithic B (MPPNB) unit (10.2 to 9.5 cal ka BP) clearly corresponds with the early Holocene maximum Dead Sea levels. 2) The second unit consists of Late Pre-Pottery Neolithic B (LPPNB) in situ walls and hearths. 3) In the subsequent PPNC (8.9 to 8.6 cal ka BP) the population density at the settlement drops dramatically, which corresponds with a significant drop in the Dead Sea level. 4) The 4th stratigraphic unit is characterized by the "Yarmoukian rubble layer". Additionally, there is evidence for a previously unrecognized use of the site by Chalcolithic pastoralists. Sedimentological analyses reveal a constant increase in dust from a remote source during the entire human occupation period, which correlates well with the detectable drops in climatic humidity from the Dead Sea. As the major focus of this study, we can now rule out previous notions that the "Yarmoukian" rubble layer could have been produced by (catastrophic) slope-scale gravitational movements. To this point, it appears that the Neolithic mega-site was abandoned due to a climatic aridification.

Keywords: Neolithic population center | Earth-surface processes | Rapid climate changes | 8.2 event | Southern Levant | Geoarcheology

Klima

Rosenberg 2013

Thomas M. Rosenberg, Frank Preusser, Jan Risberg, Anna Plikk, Khalid A. Kadi, Albert Matter & Dominik Fleitmann, *Middle and Late Pleistocene humid periods recorded in palaeolake deposits of the Nafud desert, Saudi Arabia.* Quaternary Science Reviews **70** (2013), 109–123.

Present climate in the Nafud desert of northern Saudi Arabia is hyper-arid and moisture brought by north-westerly winds scarcely reaches the region. The existence of abundant palaeolake sediments provides evidence for a considerably wetter climate in the past. However, the existing chronological framework of these deposits is solely based on radiocarbon dating of questionable reliability, due to potential post-depositional contamination with younger 14C. By using luminescence dating, we show that the lake deposits were not formed between 40 and 20 ka as suggested previously, but approximately ca 410 ka, 320 ka, 200 ka, 125 ka, and 100 ka ago. All of these humid phases are in good agreement with those recorded in lake sediments and speleothems from southern Arabia. Surprisingly, no Holocene lake deposits were identified. Geological characteristics of the deposits and diatom analysis suggest that a single, perennial lake covered the entire south-western Nafud ca 320 ka ago. In contrast, lakes of the 200 ka, 125 ka, and 100 ka humid intervals were smaller and restricted to interdune depressions of a preexisting dune relief. The concurrent occurrence of humid phases in the Nafud, southern Arabia and the eastern Mediterranean suggests that moisture in northern Arabia originated either from the Mediterranean due to more frequent frontal depression systems or from stronger Indian monsoon circulation, respectively. However, based on previously published climate model simulations and palaecolimate evidence from central Arabia and the Negev desert, we argue that humid climate conditions

in the Nafud were probably caused by a stronger African monsoon and a distinct change in zonal atmospheric circulation.
Keywords: Palaeolakes | Monsoon | Arabia | Pleistocene | OSL | TT-OSL | Diatoms

VAKS 2013

A. Vaks et al., *Speleothems Reveal 500,000-Year History of Siberian Permafrost*. science **340** (2013), 183–186.
s340-0183-Supplement.pdf
A. Vaks, O. S. Gutareva, S. F. M. Breitenbach, E. Avirmed, A. J. Mason, A. L. Thomas, A. V. Osinzev, A. M. Kononov & G. M. Henderson
Soils in permafrost regions contain twice as much carbon as the atmosphere, and permafrost has an important influence on the natural and built environment at high northern latitudes. The response of permafrost to warming climate is uncertain and occurs on time scales longer than those assessed by direct observation. We dated periods of speleothem growth in a north-south transect of caves in Siberia to reconstruct the history of permafrost in past climate states. Speleothem growth is restricted to full interglacial conditions in all studied caves. In the northernmost cave (at 60°N), no growth has occurred since Marine Isotopic Stage (MIS) 11. Growth at that time indicates that global climates only slightly warmer than today are sufficient to thaw extensive regions of permafrost.

Kultur

CHENG 2013

Siwei Chenga & Yu Xie, *Structural effect of size on interracial friendship*. PNAS **110** (2013), 7165–7169.
Social contexts exert structural effects on individuals' social relationships, including interracial friendships. In this study, we posit that, net of group composition, total context size has a distinct effect on interracial friendship. Under the assumptions of (i) maximization of preference in choosing a friend, (ii) multidimensionality of preference, and (iii) preference for same-race friends, we conducted analyses using microsimulation that yielded three main findings. First, increased context size decreases the likelihood of forming an interracial friendship. Second, the size effect increases with the number of preference dimensions. Third, the size effect is diluted by noise, i.e., the randomcomponent affecting friendship formation. Analysis of actual friendship data among 4,745 American high school students yielded results consistent with the main conclusion that increased context size promotes racial segregation and discourages interracial friendship.
friendship preference | social structure | structural constraints
The main conclusion that size reduces social integration by allowing individuals to fully exercise their preexisting preferences, however, could be applied to social relations in general. For this reasoning, one potential negative social consequence of the internet as a social interaction medium in the ever more globalized world is to encourage social isolation and social segmentation by expanding size immensely.

Metallzeiten

DICKINSON 1994

Oliver Dickinson, *The Aegean Bronze Age*. Cambridge World Archaeology (Cambridge 1994).

Oliver Dickinson has written a scholarly, accessible and up-to-date introduction to the prehistoric civilisations of Greece. The Aegean Bronze Age, the long period from roughly 3300 to 1000 BC, saw the rise and fall of the Minoan and Mycenaean civilisations. The cultural history of the region emerges through a series of thematic chapters that treat settlement, economy, crafts, exchange and foreign contact (particularly with the civilisations of the Near East), and religion and burial customs. Students and teachers will welcome this book, but it will also provide the ideal companion for serious amateurs and visitors to the Aegean.

Karlsruhe 2011

Badisches Landesmuseum Karlsruhe (Hrsg.), *Kykladen – Lebenswelten einer frühgriechischen Kultur*. (Karlsruhe 2011).

Physik

Wilczek 2013

Frank Wilczek, *Minimalism triumphant*. nature **496** (2013), 439–441.

The discovery of a particle that looked like the Higgs boson marked a milestone for physics. Results reported since then are strikingly consistent with expectations for the Higgs particle of the minimal standard model of particle physics.

Story or Book

Radford 2013

Tim Radford, *Of Genesis and genetics*. nature **496** (2013), 432–433.

Tim Radford revels in a masterly take on science invoked by the Bible.

The Serpent's Promise: The Bible Retold As Science. Steve Jones Little, Brown: 2013. 448 pp. £25

The Serpent's Promise cannot advance divine revelation, but it offers a new context for old myths. It is of course superbly written by someone who quotes historian Edward Gibbon, Marxes Karl and Groucho, Mark Twain, James Boswell and Giovanni Boccaccio, and gourmet Jean Anthelme Brillat-Savarin with the casual ease of an omnivorous reader. This book is not an overt condemnation of religious belief: skilfully, it selects stories that have informed Western culture for 2,000 years to illuminate modern research, and Jones ends with an envoi on behalf of a future enriched by "an objective and unambiguous culture whose logic, language and practices are permanent and universal. It is called science."

I don't think even Jones believes that things are going to work out that way, if only because he also begins each chapter, and the book, with illustrations by William Blake, "who demonstrates, better than almost anyone else, the power of sacred imagery to move even those who do not share his convictions". That is the problem with humans. They can intellectually endorse one thing and stubbornly love another, which is why The Serpent's Promise is more than just another science book, and all the more humane for its wider dimension.