

References

Aktuell

BOHANNON 2015

John Bohannon, *Many psychology papers fail replication test*. [science](#) **349** (2015), 910–911.

An effort to repeat 100 studies yields sobering results, but many researchers are positive about the process.

“Some will be tempted to conclude that psychology is a bad apple,” says Charles Carver, a psychologist at the University of Miami who was one of the editors of JPSP in 2008. He insists this is not the case. “This is a problem of science, medical science no less than behavioral science.” Replication efforts in other fields are equally low, says John Ioannidis, a biologist at Stanford University in Palo Alto, California, who suspects the true proportion of psychology papers that are not false positive is “something like 25 % ... [which] seems to be in the same ballpark as what we see in many biomedical disciplines.”

COLLABORATION 2015

Open Science Collaboration, *Estimating the reproducibility of psychological science*. [science](#) **349** (2015), 943.

s349-0943-Supplement.pdf

No single indicator sufficiently describes replication success, and the five indicators examined here are not the only ways to evaluate reproducibility. Nonetheless, collectively these results offer a clear conclusion: A large portion of replications produced weaker evidence for the original findings despite using materials provided by the original authors, review in advance for methodological fidelity, and high statistical power to detect the original effect sizes. Moreover, correlational evidence is consistent with the conclusion that variation in the strength of initial evidence (such as original P value) was more predictive of replication success than variation in the characteristics of the teams conducting the research (such as experience and expertise). The latter factors certainly can influence replication success, but they did not appear to do so here.

CROWTHER 2015

Thomas W. Crowther et al., *Overdependence on “significance” testing in biology, Reply to Veresoglou*. [PNAS](#) **112** (2015), E5114.

Thomas W. Crowther, Daniel S. Maynard, Stephen M. Thomas, Petr Baldrian, Kristofer Covey, Serita D. Frey, Linda T. A. van Diepen & Mark A. Bradford

The multifactor experimental design necessitates the testing of multiple comparisons, but we focus on a specific set of preplanned hypotheses throughout. We discuss “significant” and “nonsignificant” relationships and, following convention, report only the relevant P values in the text. The significance values of all preplanned comparisons are presented in the accompanying figures.

We support Fisher’s original intention for the P value; it should be “just one part of a fluid, non-numerical process that blended data and background knowledge to lead to scientific conclusions”. To conclude, we agree with Leek and Peng that, “arguing about the P value is like focusing on a single misspelling, rather than on the faulty logic of a sentence.”

Joanna Le Noury, John M. Nardo, David Healy, Jon Jureidini, Melissa Raven, Catalin Tufanaru & Elia Abi-Jaoude, *Restoring Study 329, Efficacy and harms of paroxetine and imipramine in treatment of major depression in adolescence*. *British Medical Journal* **351** (2015), h4320.

Objectives To reanalyse SmithKline Beecham's Study 329 (published by Keller and colleagues in 2001), the primary objective of which was to compare the efficacy and safety of paroxetine and imipramine with placebo in the treatment of adolescents with unipolar major depression. The reanalysis under the restoring invisible and abandoned trials (RIAT) initiative was done to see whether access to and reanalysis of a full dataset from a randomised controlled trial would have clinically relevant implications for evidence based medicine.

Design Double blind randomised placebo controlled trial.

Setting 12 North American academic psychiatry centres, from 20 April 1994 to 15 February 1998.

Participants 275 adolescents with major depression of at least eight weeks in duration. Exclusion criteria included a range of comorbid psychiatric and medical disorders and suicidality.

Interventions Participants were randomised to eight weeks double blind treatment with paroxetine (20-40 mg), imipramine (200-300 mg), or placebo.

Main Outcome Measures The prespecified primary efficacy variables were change from baseline to the end of the eight week acute treatment phase in total Hamilton depression scale (HAM-D) score and the proportion of responders (HAM-D score ≤ 8 or $\geq 50\%$ reduction in baseline HAM-D) at acute endpoint. Prespecified secondary outcomes were changes from baseline to endpoint in depression items in K-SADS-L, clinical global impression, autonomous functioning checklist, self-perception profile, and sickness impact scale; predictors of response; and number of patients who relapse during the maintenance phase. Adverse experiences were to be compared primarily by using descriptive statistics. No coding dictionary was prespecified.

Results The efficacy of paroxetine and imipramine was not statistically or clinically significantly different from placebo for any prespecified primary or secondary efficacy outcome. HAM-D scores decreased by 10.7 (least squares mean) (95% confidence interval 9.1 to 12.3), 9.0 (7.4 to 10.5), and 9.1 (7.5 to 10.7) points, respectively, for the paroxetine, imipramine and placebo groups ($P=0.20$). There were clinically significant increases in harms, including suicidal ideation and behaviour and other serious adverse events in the paroxetine group and cardiovascular problems in the imipramine group.

Conclusions Neither paroxetine nor high dose imipramine showed efficacy for major depression in adolescents, and there was an increase in harms with both drugs. Access to primary data from trials has important implications for both clinical practice and research, including that published conclusions about efficacy and safety should not be read as authoritative. The reanalysis of Study 329 illustrates the necessity of making primary trial data and protocols available to increase the rigour of the evidence base.

What Is Already Known On This Topic

There is a lack of access to data from most clinical randomised controlled trials, making it difficult to detect biased reporting

In the absence of access to primary data, misleading conclusions in publications of those trials can seem definitive

SmithKline Beecham's Study 329, an influential trial that reported that paroxetine was safe and effective for adolescents, is one such study

What This Study Adds

On the basis of access to the original data from Study 329, we report a reanalysis that concludes that paroxetine was ineffective and unsafe in this study

Access to primary data makes clear the many ways in which data can be analysed and represented, showing the importance of access to data and the value of reanalysis of trials

There are important implications for clinical practice, research, regulation of trials, licensing of drugs, and the sociology and philosophy of science

Our reanalysis required development of methods that could be adapted for future reanalyses of randomised controlled trials

MARRIS 2015

Emma Marris, *Fishing for the first Americans*. [nature 525 \(2015\), 176–178](#).

Archaeology is moving underwater and along river banks to find clues left by the people who colonized the New World.

SCHIERMEIER 2015

Quirin Schiermeier & Richard van Noorden, *Germany claims success for elite universities drive*. [nature 525 \(2015\), 168–169](#).

Report praises E4.6-billion scheme to make leading universities more competitive — but some smaller institutions have done just as well.

“For every scientist who has been recruited thanks to the Excellence Initiative, four new administrative positions were created,” he says. “It is hardly surprising that elite institutions have no research advantage over some other universities when the group that benefits most from the Excellence Initiative is not involved in science.” The DFG says that it has not looked at how the programme may have burdened university administrations. “It has attracted 4,000 talented foreign scientists to German universities and it has greatly increased these universities’ scholarly output,” says Dzwonnek. “From our point of view, this is a real success.”

VERESOGLOU 2015

Stavros D. Veresoglou, *P hacking in biology: An open secret*. [PNAS 112 \(2015\), E5112–E5113](#).

The statistical issues arising from complex experimental designs may have been extensively studied in the statistical literature, but unfortunately, ignorance of these concerns is common across biologists. Data originating from complex studies are commonly interpreted liberally, resulting in what has been termed P hacking: a pronounced mismatch between actual and reported P values.

The merit of reporting incidences of P hacking in prestigious journals mostly lies on raising awareness across biologists that this represents a widespread problem in biology, and it is not limited to articles published in fee-charging open-access journals. It also highlights a possible shortcoming of the existing peer review system in light of the debate over the use of statistical editors in prestigious journals. Propagating discussion on current scientific practices may represent a great tool to further improve quality in science.

Anthropologie

ARSUAGA 2015

Juan Luis Arsuaga et al., *Postcranial morphology of the middle Pleistocene humans from Sima de los Huesos, Spain*. [PNAS 112 \(2015\), 11524–11529](#).

Juan Luis Arsuaga, José-Miguel Carretero, Carlos Lorenzo, Asier Gómez-Olivencia, Adrián Pablos, Laura Rodríguez, Rebeca García-González, Alejandro Bonmatí, Rolf M. Quam, Ana Pantoja-Pérez, Ignacio Martínez, Arantza Aranburu, Ana Gracia-Téllez, Eva Poza-Rey, Nohemi Sala, Nuria García, Almudena Alcázar de Velasco, Gloria Cuenca-Bescós, José María Bermúdez de Castro & Eudald Carbonell

Current knowledge of the evolution of the postcranial skeleton in the genus *Homo* is hampered by a geographically and chronologically scattered fossil record. Here we present a complete characterization of the postcranium of the middle Pleistocene paleodeme from the Sima de los Huesos (SH) and its paleobiological implications. The SH hominins show the following: (i) wide bodies, a plesiomorphic character in the genus *Homo* inherited from their early hominin ancestors; (ii) statures that can be found in modern human middle-latitude populations that first appeared 1.6–1.5 Mya; and (iii) large femoral heads in some individuals, a trait that first appeared during the middle Pleistocene in Africa and Europe. The intrapopulation size variation in SH shows that the level of dimorphism was similar to modern humans (MH), but the SH hominins were less encephalized than Neandertals. SH shares many postcranial anatomical features with Neandertals. Although most of these features appear to be either plesiomorphic retentions or are of uncertain phylogenetic polarity, a few represent Neandertal apomorphies. Nevertheless, the full suite of Neandertal-derived features is not yet present in the SH population. The postcranial evidence is consistent with the hypothesis based on the cranial morphology that the SH hominins are a sister group to the later Neandertals. Comparison of the SH postcranial skeleton to other hominins suggests that the evolution of the postcranium occurred in a mosaic mode, both at a general and at a detailed level.

Keywords: human evolution | bauplan | postcranial anatomy | Sierra de Atapuerca | phylogeny

Significance: The middle Pleistocene Sima de los Huesos (SH) fossil collection provides the rare opportunity to thoroughly characterize the postcranial skeleton in a fossil population, comparable only to that obtained in the study of the Neandertal hypodigm and recent (and fossil) modern humans. The SH paleodeme can be characterized as relatively tall, wide, and muscular individuals, who are less encephalized than both Neandertals and modern humans. Some (but not all) Neandertal derived traits are present, which phylogenetically links this population with Neandertals. Thus, the full suite of Neandertal features did not arise all at once, and the evolution of the postcranial skeleton could be characterized as following a mosaic pattern.

BERGER 2015

Lee R. Berger et al., *Homo naledi*, a new species of the genus *Homo* from the Dinaledi Chamber, South Africa. [eLife 4 \(2015\), e9560](https://doi.org/10.7554/eLife.09560). DOI:10.7554/eLife.09560.

Lee R. Berger, John Hawks, Darryl J. de Ruiter, Steven E. Churchill, Peter Schmid, Lucas K. Deleuzene, Tracy L. Kivell, Heather M. Garvin, Scott A. Williams, Jeremy M. DeSilva, Matthew M. Skinner, Charles M. Musiba, Noel Cameron, Trenton W. Holliday, William Harcourt-Smith, Rebecca R. Ackermann, Markus Bastir, Barry Bogin, Debra Bolter, Juliet Brophy, Zachary D. Cofran, Kimberly A. Congdon, Andrew S. Deane, Mana Dembo, Michelle Drapeau, Marina C. Elliott, Elen M. Feuerriegel, Daniel Garcia-Martinez, David J. Green, Alia Gurtov, Joel D. Irish, Ashley Kruger, Myra F. Laird, Damiano Marchi, Marc R. Meyer, Shahed Nalla, Enquye W. Negash, Caley M. Orr, Davorka Radovic, Lauren Schroeder,

Jill E. Scott, Zachary Throckmorton, Matthew W. Tocheri, Caroline VanSickle, Christopher S. Walker, Pianpian Wei & Bernhard Zipfel

Homo naledi is a previously-unknown species of extinct hominin discovered within the Dinaledi Chamber of the Rising Star cave system, Cradle of Humankind, South Africa. This species is characterized by body mass and stature similar to small-bodied human populations but a small endocranial volume similar to australopiths. Cranial morphology of *H. naledi* is unique, but most similar to early *Homo* species including *Homo erectus*, *Homo habilis* or *Homo rudolfensis*. While primitive, the dentition is generally small and simple in occlusal morphology. *H. naledi* has humanlike manipulatory adaptations of the hand and wrist. It also exhibits a humanlike foot and lower limb. These humanlike aspects are contrasted in the postcrania with a more primitive or australopith-like trunk, shoulder, pelvis and proximal femur. Representing at least 15 individuals with most skeletal elements repeated multiple times, this is the largest assemblage of a single species of hominins yet discovered in Africa.

eLife digest Modern humans, or *Homo sapiens*, are now the only living species in their genus. But as recently as 100,000 years ago, there were several other species that belonged to the genus *Homo*. Together with modern humans, these extinct human species, our immediate ancestors and their close relatives, are collectively referred to as ‘hominins’.

Now Berger et al. report the recent discovery of an extinct species from the genus *Homo* that was unearthed from deep underground in what has been named the Dinaledi Chamber, in the Rising Star cave system in South Africa. The species was named *Homo naledi*; ‘naledi’ means ‘star’ in Sotho (also called Sesotho), which is one of the languages spoken in South Africa.

The unearthed fossils were from at least 15 individuals and include multiple examples of most of the bones in the skeleton. Based on this wide range of specimens from a single site, Berger et al. describe *Homo naledi* as being similar in size and weight to a small modern human, with human-like hands and feet. Furthermore, while the skull had several unique features, it had a small braincase that was most similar in size to other early hominin species that lived between four million and two million years ago. *Homo naledi*’s ribcage, shoulders and pelvis also more closely resembled those of earlier hominin species than those of modern humans.

The *Homo naledi* fossils are the largest collection of a single species of hominin that has been discovered in Africa so far and, in a related study, Dirks et al. describe the setting and context for these fossils. However, since the age of the fossils remains unclear, one of the next challenges will be to date the remains to provide more information about the early evolution of humans and their close relatives.

DIRKS 2015

Paul H. G. M. Dirks et al., *Geological and taphonomic context for the new hominin species Homo naledi from the Dinaledi Chamber, South Africa*. *eLife* 4 (2015), e9561. DOI:10.7554/eLife.09561.

Paul H. G. M. Dirks, Lee R. Berger, Eric M. Roberts, Jan D. Kramers, John Hawks, Patrick S. Randolph-Quinney, Marina Elliott, Charles M. Musiba, Steven E. Churchill, Darryl J. de Ruiter, Peter Schmid, Lucinda R. Backwell, Georgy A. Belyanin, Pedro Boshoff, K. Lindsay Hunter, Elen M. Feuerriegel, Alia Gurtov, James du G. Harrison, Rick Hunter, Ashley Kruger, Hannah Morris, Tebogo V. Makhubela, Becca Peixotto & Steven Tucker

We describe the physical context of the Dinaledi Chamber within the Rising Star cave, South Africa, which contains the fossils of *Homo naledi*. Approximately 1550 specimens of hominin remains have been recovered from at least 15 individuals, representing a small portion of the total fossil content. Macro-vertebrate fossils

are exclusively *H. naledi*, and occur within clay-rich sediments derived from in situ weathering, and exogenous clay and silt, which entered the chamber through fractures that prevented passage of coarser-grained material. The chamber was always in the dark zone, and not accessible to non-hominins. Bone taphonomy indicates that hominin individuals reached the chamber complete, with disarticulation occurring during/after deposition. Hominins accumulated over time as older laminated mudstone units and sediment along the cave floor were eroded. Preliminary evidence is consistent with deliberate body disposal in a single location, by a hominin species other than *Homo sapiens*, at an as-yet unknown date.

eLife digest Modern humans, or *Homo sapiens*, are now the only living species in their genus. But as recently as 20,000 years ago there were other species that belonged to the genus *Homo*. Together with modern humans, these extinct human species, our immediate ancestors and their close relatives are collectively referred to as ‘hominins’.

Now, Dirks et al. describe an unusual collection of hominin fossils that were found within the Dinaledi Chamber in the Rising Star cave system in South Africa. The fossils all belong to a newly discovered hominin species called *Homo naledi*, which is described in a related study by Berger et al. The unearthed fossils are the largest collection of hominin fossils from a single species ever to be discovered in Africa, and include the remains of at least 15 individuals and multiple examples of most of the bones in the skeleton.

Dirks et al. explain that the assemblage from the Dinaledi Chamber is unusual because of the large number of fossils discovered so close together in a single chamber deep within the cave system. It is also unusual that no other large animal remains were found in the chamber, and that the bodies had not been damaged by scavengers or predators. The fossils were excavated from soft clay-rich sediments that had accumulated in the chamber over time; it also appears that the bodies were intact when they arrived in the chamber, and then started to decompose.

Dirks et al. discuss a number of explanations as to how the remains came to rest in the Dinaledi Chamber, which range from whether *Homo naledi* lived in the caves to whether they were brought in by predators. Most of the evidence obtained so far is largely consistent with these bodies being deliberately disposed of in this single location by the same extinct hominin species. However, a number of other explanations cannot be completely ruled out and further investigation is now needed to uncover the series of events that resulted in this unique collection of hominin fossils.

NEWMAN 2015

Aaron J. Newman, Ted Supalla, Nina Fernandez, Elissa L. Newport & Daphne Bavelier, *Neural systems supporting linguistic structure, linguistic experience, and symbolic communication in sign language and gesture*. [PNAS 112 \(2015\), 11684–11689](#).

Sign languages used by deaf communities around the world possess the same structural and organizational properties as spoken languages: In particular, they are richly expressive and also tightly grammatically constrained. They therefore offer the opportunity to investigate the extent to which the neural organization for language is modality independent, as well as to identify ways in which modality influences this organization. The fact that sign languages share the visual–manual modality with a nonlinguistic symbolic communicative system—gesture—further allows us to investigate where the boundaries lie between language and symbolic communication more generally. In the present study, we had three goals: to investigate the neural processing of linguistic structure in American Sign Language (using verbs of motion classifier constructions, which may lie at the boundary

between language and gesture); to determine whether we could dissociate the brain systems involved in deriving meaning from symbolic communication (including both language and gesture) from those specifically engaged by linguistically structured content (sign language); and to assess whether sign language experience influences the neural systems used for understanding nonlinguistic gesture. The results demonstrated that even sign language constructions that appear on the surface to be similar to gesture are processed within the left-lateralized frontal-temporal network used for spoken languages —supporting claims that these constructions are linguistically structured. Moreover, although nonsigners engage regions involved in human action perception to process communicative, symbolic gestures, signers instead engage parts of the languageprocessing network—demonstrating an influence of experience on the perception of nonlinguistic stimuli.

Keywords: brain | American Sign Language | fMRI | deafness | neuroplasticity

Significance: Although sign languages and nonlinguistic gesture use the same modalities, only sign languages have established vocabularies and follow grammatical principles. This is the first study (to our knowledge) to ask how the brain systems engaged by sign language differ from those used for nonlinguistic gesture matched in content, using appropriate visual controls. Signers engaged classic left-lateralized language centers when viewing both sign language and gesture; nonsigners showed activation only in areas attuned to human movement, indicating that sign language experience influences gesture perception. In signers, sign language activated left hemisphere language areas more strongly than gestural sequences. Thus, sign language constructions—even those similar to gesture—engage language-related brain systems and are not processed in the same ways that nonsigners interpret gesture.

SCHWARTZ 2015

Jeffrey H. Schwartz & Ian Tattersall, *Defining the genus Homo*. [science 349 \(2015\), 931–932](#).

Early hominin species were as diverse as other mammals.

Recent analyses (7, 11, 12) agree in recognizing that the term “early Homo” masks taxonomic diversity. But they produce inconsistent results. Wood and Collard (14), for example, suggest that the species *H. habilis* and *Homo rudolfensis* be excluded from *Homo* for adaptive reasons, whereas Antón et al. (7) claim that an adaptive shift unites these species. Spoor et al. (11) stress the australopith-like shape of the *H. habilis* OH7 mandible, whereas Villmoare et al. (12) assert that the more derived features of LD350 warrant its inclusion in *Homo*. Nonetheless, all make clear how sorely both our concept of *Homo*, and the number of its known species, require reassessment.

STRINGER 2015

Chris Stringer, *The many mysteries of Homo naledi*. [eLife 4 \(2015\), e10627](#). DOI:10.7554/eLife.10627.

More than 1500 fossils from the Rising Star cave system in South Africa have been assigned to a new human species, *Homo naledi*, which displays a unique combination of primitive and derived traits throughout the skeleton.

Biologie

BEHRENSMEYER 2015

Anna K. Behrensmeyer, *Four million years of African herbivory*. [PNAS 112 \(2015\), 11428–11429](#).

CERLING 2015

Thure E. Cerling et al., *Dietary changes of large herbivores in the Turkana Basin, Kenya from 4 to 1 Ma*. [PNAS **112** \(2015\), 11467–11472](#).

[pnas112-11467-Supplement1.xlsx](#), [pnas112-11467-Supplement2.xlsx](#)

Thure E. Cerling, Samuel A. Andanje, Scott A. Blumenthal, Francis H. Brown, Kendra L. Chritz, John M. Harris, John A. Hart, Francis M. Kirera, Prince Kaleme, Louise N. Leakey, Meave G. Leakey, Naomi E. Levin, Fredrick Kyalo Manthi, Benjamin H. Passey & Kevin T. Uno

A large stable isotope dataset from East and Central Africa from ca. 30 regional collection sites that range from forest to grassland shows that most extant East and Central African large herbivore taxa have diets dominated by C4 grazing or C3 browsing. Comparison with the fossil record shows that faunal assemblages from ca. 4.1–2.35 Ma in the Turkana Basin had a greater diversity of C3–C4 mixed feeding taxa than is presently found in modern East and Central African environments. In contrast, the period from 2.35 to 1.0Ma had more C4-grazing taxa, especially nonruminant C4-grazing taxa, than are found in modern environments in East and Central Africa. Many nonbovid C4 grazers became extinct in Africa, notably the suid *Notochoerus*, the hipparion equid *Eurygnathohippus*, the giraffid *Sivatherium*, and the elephantid *Elephas*. Other important nonruminant C4-grazing taxa switched to browsing, including suids in the lineage *Kolpochoerus-Hylochoerus* and the elephant *Loxodonta*. Many modern herbivore taxa in Africa have diets that differ significantly from their fossil relatives. Elephants and tragelaphin bovids are two groups often used for paleoecological insight, yet their fossil diets were very different from their modern closest relatives; therefore, their taxonomic presence in a fossil assemblage does not indicate they had a similar ecological function in the past as they do at present. Overall, we find ecological assemblages of C3-browsing, C3–C4-mixed feeding, and C4-grazing taxa in the Turkana Basin fossil record that are different from any modern ecosystem in East or Central Africa.

Keywords: carbon isotopes | evolution | diet

Significance: Stable carbon isotopes give diet information for both modern and fossil mammals and can be used to classify diets as C4 grazers, C3–C4 mixed, or C3 browsers. We show that diets of some major African herbivore lineages have significantly changed over the past 4 million years by comparing fossils from the Turkana Basin in Kenya with modern mammals from East and Central Africa. Some fossil assemblages have no modern analogues in East and Central Africa, suggesting different ecological functions for some mammals in the past as compared with their modern counterparts. The development of modern tropical grassland ecosystems are products of the coevolution of both grasses and herbivores.

Energie

KRAUSE 2015

Sebastian M. Krause, Stefan Börries & Stefan Bornholdt, *Econophysics of adaptive power markets, When a market does not dampen fluctuations but amplifies them*. [Physical Review E **92** \(2015\), 12815](#). [DOI:10.1103/PhysRevE.92.012815](#).

The average economic agent is often used to model the dynamics of simple markets, based on the assumption that the dynamics of a system of many agents can be averaged over in time and space. A popular idea that is based on this seemingly intuitive notion is to dampen electric power fluctuations from fluctuating sources

(as, e.g., wind or solar) via a market mechanism, namely by variable power prices that adapt demand to supply. The standard model of an average economic agent predicts that fluctuations are reduced by such an adaptive pricing mechanism. However, the underlying assumption that the actions of all agents average out on the time axis is not always true in a market of many agents. We numerically study an econophysics agent model of an adaptive power market that does not assume averaging a priori. We find that when agents are exposed to source noise via correlated price fluctuations (as adaptive pricing schemes suggest), the market may amplify those fluctuations. In particular, small price changes may translate to large load fluctuations through catastrophic consumer synchronization. As a result, an adaptive power market may cause the opposite effect than intended: Power demand fluctuations are not dampened but amplified instead.

PENTLAND 2015

Alex Pentland, *Simple market models fail the test.* [nature](#) **525** (2015), 190–191.

An analysis of energy markets with prices that vary according to demand finds that this market design unexpectedly serves to amplify, rather than dampen, fluctuations in power use.

The authors find that this sort of market thinking is too simplistic. They show that when there are unusual events, such as an especially hot day or a snowstorm, people’s actions become synchronized, with everyone turning up the air conditioning or the heating at the time the price normally drops (Fig. 1). As a consequence, rather than smoothing demand as expected, the market will cause huge spikes in demand that completely swamp the electricity grid, decoupling price and demand, and potentially causing power failures and even damaging the grid itself. Interestingly, this same synchronization process is thought to be the source of ‘flash crashes’ that have been observed in financial markets.

The paradoxical consequence of this technological move towards greater transparency, democratization and engagement is that fads, political turmoil and bubbles are more common than ever before.

Isotope

BONSALL 2015

Clive Bonsall et al., *Food for Thought, Re-assessing Mesolithic diets in the Iron Gates.* [Radiocarbon](#) (2015), preprint, 1–11. DOI:10.2458/azu_rc.57.18440.

Clive Bonsall, Gordon Cook, Catriona Pickard, Kathleen McSweeney, Kerry Sayle, Łászló Bartosiewicz, Ivana Radovanović, Thomas Higham, Andrei Soicaru & Adina Boroneanț

Stable isotope ratios of carbon, nitrogen, and sulfur in human bone collagen are used routinely to aid in the reconstruction of ancient diets. Isotopic analysis of human remains from sites in the Iron Gates section of the Lower Danube Valley has led to conflicting interpretations of Mesolithic diets in this key region of southeast Europe. One view (Bonsall et al. 1997, 2004) is that diets were based mainly on riverine resources throughout the Mesolithic. A competing hypothesis (Nehlich et al. 2010) argues that Mesolithic diets were more varied with at least one Early Mesolithic site showing an emphasis on terrestrial resources, and riverine resources only becoming dominant in the Later Mesolithic. The present article revisits this issue, discussing the stable isotope data in relation to archaeozoological and radiocarbon evidence.

Judentum

SCHREMER 2015

Adiel Schremer, *Avot Reconsidered, Rethinking Rabbinic Judaism. Jewish Quarterly Review* **105** (2015), 287–311.

In this essay I have attempted to challenge a widespread view that the idea of the Sinaitic origin of all rabbinic tradition is the conceptual foundation upon which rabbinic Judaism rests, and its ideological manifesto. The most famous expression of this manifesto in rabbinic literature is in tractate Avot. This view is problematic for a number of reasons that I have attempted to lay out. First, this document, I suggest, does not speak for all rabbinic circles but rather emanates from the school of R. Eliezer ben Hyrcanus (or his followers), a sage who was not followed by the group we know to represent the mainstream of Palestinian rabbis of the tannaitic era. Second, I demonstrated that the opening passage of t'Eduy may be read as a polemic against the ideology of the school presented by mAvot. While the latter attributes divine status to all of rabbinic teaching, the former considers this view dangerous, and it calls instead for a sharp distinction between “words of Torah” and “words of scribes.”

The ideological claim that rabbinic halakhah is of Sinaitic origin and therefore has a divine status is defensive in its nature. It attempts to “guard” rabbinic teaching from a polemical attack, which purports to debunk its authority by emphasizing its human origin. Such attacks played a pivotal role in the anti-pharisaic polemic of various sectarian groups of the Second Temple period. However, that ideology not only lost its necessity in postdestruction, postsectarian times, but, far worse, it became a burden. For if all of the halakhic tradition stems from Moses, its status is similar to that of “words of Torah,” which humans cannot manipulate and change. The Yavnean sages therefore needed to reject the Eliezeran claim that all of the halakhah has the status of “Torah,” in order to pursue their grand project of adjusting both the law and the “tradition of the fathers” to the new circumstances in which they lived. They accomplished this by declaring the authorship of each rabbinic teaching, so as to make its human origin as clear as possible.

The discursive attempt at rejecting a deeply ingrained ideological stance can never fully accomplish its goal so long as the challenges that stance purports to address still exist. The polemical horizon of the pharisaic age lived on in attenuated form in the tannaitic age. For this reason, one can find in early rabbinic literature the claims: “just as the laws of the sabbatical year, its rules and their details, were said at Sinai, so too all [of the laws] —their rules and their details—were said at Sinai,” and “even that which a faithful student is destined to rule before his master has already been said to Moses at Sinai.” This and other similar assertions continued to exist within rabbinic tradition, side by side with the fundamental understanding of the human nature of rabbinic halakhah. The tension and conflict between these two vectors is one of the powerful forces that shaped rabbinic halakhah for generations.

Kultur

LANGLEY 2015

Michelle C. Langley, *Symbolic Material Culture in the Late Pleistocene, Use in Prehistory, Appearance in the Archaeological Record and Taphonomy*. In: BARBORA PUTOVA & VACLAV SOUKUP (Hrsg.),

The Genesis of Creativity and the Origin of the Human Mind. (Prag 2015), 57–75.

Through focusing on four categories of artefacts – body ornamentation, hunting weaponry, mobiliary art, and rock art – this paper has outlined the possible ways in which these material culture items were used in the Late Pleistocene as well as highlighted the difficulties of investigating the development and use of symbolic material culture during this period. While it is in no way exhaustive in its discussion of the issues inherent in this line of research, it nonetheless provides an understanding of the complexities various anthropogenic and taphonomic processes have on the formation of the archaeological record of symbolic behaviour in later human evolution. of all lines of research in human origins studies, the investigation of symbolic behaviour perhaps requires the most caution when building interpretations from the record which survives to be examined.

Religion

WADE 2015

Lizzie Wade, *Birth of the Moralizing Gods.* *science* **349** (2015), 918–922.

A new theory aims to explain the success of world religions—but testing it remains a challenge.