

References

Aktuell

COUZIN-FRANKEL 2015

Jennifer Couzin-Frankel, *Eggs Unlimited, A company's fertility treatments spark disbelief as well as hope.* [science](#) **350** (2015), 620–624.

The published paper notes that the women had poor prognoses, and that pregnancy rates decrease with each subsequent standard IVF cycle. Keefe disputes that. Data “show that the pregnancy rate per IVF cycle doesn’t change much up to cycle five,” and usually hovers around 30%, he says. That’s awfully close to the 26% reported by the Toronto group. To Keefe and some others, the pregnancies were most likely due to garden-variety IVF.

“Everybody wants to believe in Santa Claus,” he says. He wants OvaScience to halt all treatments until the basic science is resolved. “You’re proposing to offer something for \$50,000,” he says, estimating the total cost of AUGMENT to patients. The company “may be sure” where those putative precursors come from, “but the world is not.”

FOWLER 2015

Anthony Fowler & B. Pablo Montagnes, *Value of ex ante predictions and independent tests for assessing false-positive results, Reply to Healy et al.* [PNAS](#) **112** (2015), E6592.

Healy et al.’s letter suggests that they have partly misread our paper as a criticism of their research design. We grant that their research design and identifying assumptions are sound but worry that their result is a chance falsepositive, which can arise even with a perfect research design. We test several additional, independent hypotheses that should hold if college football games do indeed influence elections. We find no support for any of these independent hypotheses, leading us to conclude that the original result is most likely a false-positive.

HEALY 2015

Andrew Healy, Neil Malhotra & Cecilia Hyunjung Mo, *Determining false-positives requires considering the totality of evidence.* [PNAS](#) **112** (2015), E6591.

We thank Fowler and Montagnes for pushing us to reconsider the full set of empirical evidence. We have done so and conclude that college football wins increase incumbent vote share, consistent with a large literature on irrelevant events and voting. We look forward to future scholars evaluating the implications of these results for democracy, such as the excellent work of Ashworth and Bueno de Mesquita.

TIMPSON 2015

Adrian Timpson, Katie Manning & Stephen Shennan, *Inferential mistakes in population proxies, A response to Torfing’s “Neolithic population and summed probability distribution of ¹⁴C-dates”.* [Journal of Archaeological Science](#) **63** (2015), 199–202.

In his paper “Neolithic population and summed probability distribution of 14C-dates” Torfing opposes the widely held principle originally proposed by Rick (1987) that variation through time in the amount of archaeological material discovered in a region will reflect variation in the size of that local human population. His argument illustrates a persistent divide in archaeology between analytical and descriptive approaches when using proxies for past population size. We critically evaluate the numerous inferential mistakes he makes, showing that his conclusion is unjustified.

Keywords: Population | Neolithic | SPD | Proxy | Torfing | Radiocarbon | C14

TORFING 2015

Tobias Torfing, *Layers of assumptions, A reply to Timpson, Manning, and Shennan*. [Journal of Archaeological Science](#) **63** (2015), 203–205.

In a response to my paper “Neolithic population and summed probability distribution of 14C-dates”, Timpson, Shennan, and Manning accuse me of making a series of inferential mistakes. Their argument is based on the opinion that if advanced statistical treatment of data is performed and an explicit null hypothesis is tested, then the argument is well founded. I argue that they ignore a series of underlying assumptions that connect the object of interest – prehistoric population – to the data they utilize radiocarbon dates. In my article, I explored some of the issues regarding these assumptions and demonstrated that it is difficult to argue that these assumptions are true. If the underlying assumptions are not true, or it cannot be established whether they are true or not, further statistical analysis of the data will not provide a reliable result.

Keywords: Population | Neolithic | Proxy | Sampling | Radiocarbon | C14

Anthropologie

GÓMEZ-ROBLES 2015

Aida Gómez-Robles, William D. Hopkins, Steven J. Schapiro & Chet C. Sherwood, *Relaxed genetic control of cortical organization in human brains compared with chimpanzees*. [PNAS](#) **112** (2015), 14799–14804.

[pnas112-14799-Supplement1.txt](#), [pnas112-14799-Supplement2.txt](#), [pnas112-14799-Supplement3.txt](#)

The study of hominin brain evolution has focused largely on the neocortical expansion and reorganization undergone by humans as inferred from the endocranial fossil record. Comparisons of modern human brains with those of chimpanzees provide an additional line of evidence to define key neural traits that have emerged in human evolution and that underlie our unique behavioral specializations. In an attempt to identify fundamental developmental differences, we have estimated the genetic bases of brain size and cortical organization in chimpanzees and humans by studying phenotypic similarities between individuals with known kinship relationships. We show that, although heritability for brain size and cortical organization is high in chimpanzees, cerebral cortical anatomy is substantially less genetically heritable than brain size in humans, indicating greater plasticity and increased environmental influence on neurodevelopment in our species. This relaxed genetic control on cortical organization is especially marked in association areas and likely is related to underlying microstructural changes in neural circuitry. A major result of increased plasticity is that the development of neural circuits that underlie behavior is shaped by the environmental, social, and cultural context more intensively in humans than in other primate species, thus providing an anatomical basis for behavioral and cognitive evolution.

Keywords: brain evolution | plasticity | hominins | neocortex | altriciality

Significance: Despite decades of research, we still have a very incomplete understanding of what is special about the human brain compared with the brains of our closest fossil and living relatives. Parsing the genetic versus environmental factors that govern the structure of the cerebral cortex in humans and chimpanzees may shed light on the evolution of behavioral flexibility in the human lineage. We show that the morphology of the human cerebral cortex is substantially less genetically heritable than in chimpanzees and therefore is more responsive to molding by environmental influences. This anatomical property of increased plasticity, which is likely related to the human pattern of development, may underlie our species' capacity for cultural evolution.

SCHMIDT 2015

Christoph Schmidt, Karin Kindermann, Philip van Peer & Olaf Bubbenzer, *Multi-emission luminescence dating of heated chert from the Middle Stone Age sequence at Sodmein Cave (Red Sea Mountains, Egypt)*. *Journal of Archaeological Science* **63** (2015), 94–103.

Sodmein Cave in Egypt is one of the rare archaeological sites in north-eastern Africa conserving human occupation remains of a period most relevant for the 'Out of Africa II' hypothesis. This underlines the need for establishing a chronological framework for the more than 4 m of stratified sediments ranging from the Middle Stone Age (MSA) to the Neolithic. The lowest layer J hosts huge fireplaces, from which we report luminescence ages of heated chert fragments unearthed from different depths. The 'multiemission' dating approach – using both the blue and red TL of each specimen as well as the OSL emission of one sample – allowed identifying the most reliable ages. Samples yield ages between $<121 \pm 15$ ka (maximum age) and 87 ± 9 ka. These data evidence human presence at the site during MIS 5. For integrating Sodmein Cave into the actual discussion of the dispersal patterns of modern humans and to identify potential connections with other sites in the Nile Valley and in the Middle East, a sound and reliable chronology is indispensable.

Keywords: Luminescence dating | Burnt chert | Burnt flint | Egypt | Out of Africa II | Middle Stone Age

Bibel

KAHN 2015

Dan'el Kahn, *Why did Necho II kill Josiah?* In: JANA MYNÁŘOVÁ, PAVEL ONDERKA & PETER PAVÚK (Hrsg.), *There and Back Again – the Crossroads II, Proceedings of an International Conference Held in Prague, September 15–18, 2014*. (Prag 2015), 511–528.

Therefore, Josiah did not go to fight Necho II at Megiddo, but he was an Egyptian vassal who tried to stretch the boundaries of freedom of action, trying the patience of the New Egyptian ruler, Necho II, a bit too much. It seems that Josiah underestimated the severity of his tax evading actions in the Egyptians' minds and thus was executed by beheading.

Biologie

DIBNER 2015

Charna Dibner & Ueli Schibler, *A pancreatic clock times insulin release, Circadian oscillators of beta cells control insulin secretion and glucose homeostasis.* *science* **350** (2015), 628–629.

Insulin release is acutely regulated by dietary sugar intake; circadian beta cell clocks modulate the efficacy of this process in a daytime-dependent manner through the circadian regulation of genes involved in secretion.

If future studies confirm that obesity and type 2 diabetes are associated with circadian clock perturbations in humans, they will open new avenues for treating these diseases.

MUKHERJI 2015

Atish Mukherji, Ahmad Kobiita & Pierre Chambon, *Shifting the feeding of mice to the rest phase creates metabolic alterations, which, on their own, shift the peripheral circadian clocks by 12 hours.* *PNAS* **112** (2015), E6683–E6690.

The molecular mechanisms underlying the events through which alterations in diurnal activities impinge on peripheral circadian clocks (PCCs), and reciprocally how the PCCs affect metabolism, thereby generating pathologies, are still poorly understood. Here, we deciphered how switching the diurnal feeding from the active to the rest phase, i.e., restricted feeding (RF), immediately creates a hypoinsulinemia during the active phase, which initiates a metabolic reprogramming by increasing FFA and glucagon levels. In turn, peroxisome proliferator-activated receptor alpha (PPAR α) activation by free fatty acid (FFA), and cAMP response element-binding protein (CREB) activation by glucagon, lead to further metabolic alterations during the circadian active phase, as well as to aberrant activation of expression of the PCC components nuclear receptor subfamily 1, group D, member 1 (Nr1d1/RevErb α), Period (Per1 and Per2). Moreover, hypoinsulinemia leads to an increase in glycogen synthase kinase 3 α (GSK3 α) activity that, through phosphorylation, stabilizes and increases the level of the RevErb α protein during the active phase. This increase then leads to an untimely repression of expression of the genes containing a RORE DNA binding sequence (DBS), including the Bmal1 gene, thereby initiating in RF mice a 12-h PCC shift to which the CREB-mediated activation of Per1, Per2 by glucagon modestly contributes. We also show that the reported corticosterone overproduction during the RF active phase reflects an adrenal aberrant activation of CREB signaling, which selectively delays the activation of the PPAR α –RevErb α axis in muscle and heart and accounts for the retarded shift of their PCCs.

Keywords: shifted eating | shifted peripheral circadian clocks | metabolic alterations | RevErb α | PPAR α

Significance: Under homeostasis, peripheral circadian clocks (CCs) and metabolism are intimately linked, as pathologies occur on perturbation of their coupling. In mice, shifting the feeding time from the phase of activity (night) to the phase of rest (day) is known to act as a time cue for peripheral CCs, leading to a 12-hour shift of the time at which their CC components are expressed. However, the molecular mechanisms that underlie this shift are largely unknown. Here, we reveal both the origin and the identity of the metabolic signals that are generated on shifting eating to the rest phase and how these signals directly alter the expression of CC components to generate the shift that ultimately leads to metabolic syndrome-like pathology.

MUKHERJI 2015

Atish Mukherji, Ahmad Kobiita, Manohar Damara, Nisha Misra, Hamid Meziane, Marie-France Champy & Pierre Chambon, *Shifting eating to the circadian rest phase misaligns the peripheral clocks with the master SCN clock and leads to a metabolic syndrome*. [PNAS 112 \(2015\), E6691–E6698](#).

[pnas112-E6691-Supplement.xls](#)

The light-entrained master central circadian clock (CC) located in the suprachiasmatic nucleus (SCN) not only controls the diurnal alternance of the active phase (the light period of the human light/dark cycle, but the mouse dark period) and the rest phase (the human dark period, but the mouse light period), but also synchronizes the ubiquitous peripheral CCs (PCCs) with these phases to maintain homeostasis. We recently elucidated in mice the molecular signals through which metabolic alterations induced on an unusual feeding schedule, taking place during the rest phase [i.e., restricted feeding (RF)], creates a 12-h PCC shift. Importantly, a previous study showed that the SCN CC is unaltered during RF, which creates a misalignment between the RF-shifted PCCs and the SCN CC-controlled phases of activity and rest. However, the molecular basis of SCN CC insensitivity to RF and its possible pathological consequences are mostly unknown. Here we deciphered, at the molecular level, how RF creates this misalignment. We demonstrate that the PPAR α and glucagon receptors, the two instrumental transducers in the RF-induced shift of PCCs, are not expressed in the SCN, thereby preventing on RF a shift of the master SCN CC and creating the misalignment. Most importantly, this RF-induced misalignment leads to a misexpression (with respect to their normal physiological phase of expression) of numerous CC-controlled homeostatic genes, which in the long term generates in RF mice a number of metabolic pathologies including diabetes, obesity, and metabolic syndrome, which have been reported in humans engaged in shift work schedules.

Keywords: circadian clocks misalignment | shift work | diabetes | metabolic syndrome | mouse

Significance: Mounting epidemiological and genetic evidence suggests that the disruption of circadian rhythms is at the origin of pathologies. It is known that people who are engaged in shift work and exhibit a shifted feeding schedule often develop a cohort of metabolic pathologies including diabetes, obesity, and metabolic syndrome. However, the molecular mechanisms that are at the origin of these pathologies are poorly understood. Using mice, we now revealed at the molecular level how metabolic alterations generated on shifting the eating schedule from the normal active phase to the rest phase creates a misalignment' between the central and peripheral circadian clocks. Importantly, we demonstrate that this misalignment progressively induces a metabolic pathological syndrome similar to that observed in shift workers.

PERELIS 2015

Mark Perelis et al., *Pancreatic β cell enhancers regulate rhythmic transcription of genes controlling insulin secretion*. [science 350 \(2015\), 650](#).

[s350-0650-Supplement.pdf](#)

Mark Perelis, Biliana Marcheva, Kathryn Moynihan Ramsey, Matthew J. Schipma, Alan L. Hutchison, Akihiko Taguchi, Clara Bien Peek, Heekyung Hong, Wenyu Huang, Chiaki Omura, Amanda L. Allred, Christopher A. Bradfield, Aaron R. Dinner, Grant D. Barish & Joseph Bass

Our results show that local clock-driven genomic rhythms program cell function across the light-dark cycle, including the priming of insulin secretion within limited time windows each day. Cell type-specific transcriptional regulation by the clock localizes to rhythmic enhancers that are unique to the b cell.

The mammalian transcription factors CLOCK and BMAL1 are essential components of the molecular clock that coordinate behavior and metabolism with the solar cycle. Genetic or environmental perturbation of circadian cycles contributes to metabolic disorders including type 2 diabetes. To study the impact of the cell-autonomous clock on pancreatic b cell function, we examined pancreatic islets from mice with either intact or disrupted BMAL1 expression both throughout life and limited to adulthood. We found pronounced oscillation of insulin secretion that was synchronized with the expression of genes encoding secretory machinery and signaling factors that regulate insulin release. CLOCK/ BMAL1 colocalized with the pancreatic transcription factor PDX1 within active enhancers distinct from those controlling rhythmic metabolic gene networks in liver. We also found that b cell clock ablation in adult mice caused severe glucose intolerance. Thus, cell type-specific enhancers underlie the circadian control of peripheral metabolism throughout life and may help to explain its dysregulation in diabetes.

Energie

DARES 2015

Christopher J. Dares, Alexander M. Lapidus, Bruce J. Mincher & Thomas J. Meyer, *Electrochemical oxidation of $^{243}\text{Am}(\text{III})$ in nitric acid by a terpyridyl-derivatized electrode.* [science 350 \(2015\), 652–655.](#)
s350-0652-Supplement.pdf

Selective oxidation of trivalent americium (Am) could facilitate its separation from lanthanides in nuclear waste streams. Here, we report the application of a high-surface-area, tin-doped indium oxide electrode surface-derivatized with a terpyridine ligand to the oxidation of Am(III) to Am(V) and Am(VI) in nitric acid. Potentials as low as 1.8 volts (V) versus the saturated calomel electrode were applied, 0.7 V lower than the 2.6 V potential for one-electron oxidation of Am(III) to Am(IV) in 1 molar acid. This simple electrochemical procedure provides a method to access the higher oxidation states of Am in noncomplexing media for the study of the associated coordination chemistry and, more important, for more efficient separation protocols.

SODERQUIST 2015

Chuck Soderquist, *How to isolate americium, An electrolytic process enables isolation of the radioactive element americium from used nuclear fuel.* [science 350 \(2015\), 635–636.](#)

An alternative to placing intact fuel in a repository is to chemically separate it into its components. This converts the fuel to a number of simple compounds, intended to simplify the design of the fuel repository and make management of the fuel easier. The idea of separating used nuclear fuel into separate components has been around since the 1950s. Until the 1980s, fuel was reprocessed using chemistry developed in the 1940s and 1950s. These methods generated large volumes of waste, such as the Hanford tank waste in the state of Washington. The purpose was to recover uranium and plutonium, which were quite valuable at the time.

With the raw fuel gone and the highly hazardous components removed and safely dealt with, the original question of the integrity of the fuel in the repository becomes moot.

All the transuranium elements removed from the fuel can be burned up in a reactor and irrevocably destroyed through conversion into much less toxic fission products. The uranium itself, if made quite pure, has low toxicity. The uranium fission products cesium-137 and strontium-90, which contribute most of the heat and intense radioactivity of the fuel, can be removed and allowed to decay separately (with a ≈ 30 -year half-life) to eliminate the heat load in the repository. Once the strontium, cesium, uranium, and transuranium elements have been removed, the remaining fuel is much less radioactive (most of it can be handled with a gloved hand) and has much smaller volume than the original fuel. This remainder is roughly as hazardous as the ore originally mined to make the fuel.

Isotope

SANDIAS 2015

Michela Sandias & Gundula Müldner, *Diet and herding strategies in a changing environment, Stable isotope analysis of Bronze Age and Late Antique skeletal remains from Ya'amūn, Jordan*. [Journal of Archaeological Science](#) **63** (2015), 24–32.

JAS063-0024-Supplement.docx

Carbon and nitrogen stable isotope ratios of 45 human and 23 faunal bone collagen samples were measured to study human diet and the management of domestic herbivores in past Jordan, contrasting skeletal remains from the Middle and Late Bronze Age and the Late Roman and Byzantine periods from the site of Ya'amun near Irbid. The isotope data demonstrate that the management of the sheep and goats changed over time, with the earlier animals consuming more plants from semi-arid habitats, possibly because of transhumant herding strategies. The isotope data for fish presented here are the first from archaeological contexts from the Southern Levant. Although fish of diverse provenance was available at the site, human diet was predominately based on terrestrial resources and there was little dietary variability within each time-period. Isotopic variation between humans from different time-periods can mostly be explained by 'baseline shifts' in the available food sources; however, it is suggested that legumes may have played a more significant role in Middle and Late Bronze Age diet than later on.

Keywords: Carbon and nitrogen isotopes | Bone collagen | Bronze Age | Roman period | Byzantine period | Fish

WEBB 2015

Emily C. Webb, Noah V. Honch, Philip J. H. Dunn, Gunilla Eriksson, Kerstin Lidén & Richard P. Evershed, *Compound-specific amino acid isotopic proxies for detecting freshwater resource consumption*. [Journal of Archaeological Science](#) **63** (2015), 104–114.

Of central importance to palaeodietary reconstruction is a clear understanding of relative contributions of different terrestrial (i.e., C3 vs. C4 plants) and aquatic (i.e., freshwater vs. marine) resources to human diet. There are, however, significant limitations associated with the ability to reconstruct palaeodiet using bulk collagen stable isotope compositions in regions where diverse dietary resources are available. Recent research has determined that carbon-isotope analysis of individual amino acids has considerable potential to elucidate dietary protein source where bulk isotopic compositions cannot. Using $\delta^{13}\text{CAA}$ values for human and faunal remains from Zvejnieki, Latvia (8th – 3rd millennia BCE), we test several isotopic proxies focused on distinguishing freshwater protein consumption from

both plant-derived and marine protein consumption. We determined that the D13CGly-Phe and D13CVal-Phe proxies can effectively discriminate between terrestrial and aquatic resource consumption, and the relationship between essential d13CAA values and the D13CGly-Phe and D13CVal-Phe proxies can differentiate among the four protein consumption groups tested here. Compound-specific amino acid carbon-isotope dietary proxies thus enable an enhanced understanding of diet and resource exploitation in the past, and can elucidate complex dietary behaviour.

Keywords: Amino acids | Carbon isotopes | Nitrogen isotopes | Palaeodiet | Zvejnieki | Latvia

Kupfer

ARTIOLI 2015

G. Artioli, I. Angelini, U. Tecchiati & A. Pedrotti, *Eneolithic copper smelting slags in the Eastern Alps, Local patterns of metallurgical exploitation in the Copper Age*. [Journal of Archaeological Science](#) **63** (2015), 78–83.

A number of slags of all known sites in the Italian Eastern Alps showing occurrences of copper smelting activities in the Copper Age have been characterized by lead isotope analysis. All the investigated smelting slags from Trentino (Romagnano Loc, La Vela, Gaban, Acquaviva di Besenello, Montesei di Serso) and Alto Adige/Sud Tyrol (Millan, Gudon, Bressanone Circonvallazione Ovest) have been recently characterized by thorough mineralogical, petrographical and chemical analysis and demonstrated to be the product of copper smelting activities of chalcopyrite-based mineral charges, with an immature technological extraction process referred as the “Chalcolithic” smelting process. Revision of the available radiocarbon dates show that the metallurgical activities pertaining to the analysed slags can be attributed to the third millennium BC. The lead isotope analysis indicates clearly that the mineral charge used for the smelting process was extracted from nearby mineral deposits. The detailed analysis of the spatial distribution of ores and slags allows for the first time to define the local organization of the metallurgical operations.

Keywords: Copper metallurgy | Eastern Alps | Smelting slags | Eneolithic | Lead isotope analysis

Metallzeiten

KRISTIANSEN 2015

Kristian Kristiansen & Paulina Suchowska-Ducke, *Connected Histories, The Dynamics of Bronze Age Interaction and Trade 1500–1100 BC*. [Proceedings of the Prehistoric Society](#) **81** (2015), 361–392.

The Bronze Age was the first epoch in which societies became irreversibly linked in their co-dependence on ores and metallurgical skills that were unevenly distributed in geographical space. Access to these critical resources was secured not only via long-distance physical trade routes, making use of landscape features such as river networks, as well as built roads, but also by creating immaterial social networks, consisting of interpersonal relations and diplomatic alliances, established and maintained through the exchange of extraordinary objects (gifts). In this article, we reason about Bronze Age communication networks and apply the results of use-wear analysis to create robust indicators of the rise and fall of political and

commercial networks. In conclusion, we discuss some of the historical forces behind the phenomena and processes observable in the archaeological record of the Bronze Age in Europe and beyond.

Keywords: Bronze Age communication networks | agents | temperate Europe | Mediterranean Basin

Conclusion: During the Bronze Age, especially from the 16th century BC onward, vast networks of communication existed, transforming physical geography into social geographies. Economic and technological innovations diffused rapidly, flattening ‘cultural gradients’ and removing borders to trade, exchange, and travel (Harding 1984; Bouzek 1985; Kristiansen & Larsson 2005; Vandkilde 2013b). The starting point for this investigation was formed by the premises that:

- a.** pan-European economic and political interdependence can be traced back at least to the Bronze Age;
- b.** there exists a strong correlation between traders and warriors, which can be used as proxy evidence for cross-cultural communication in the archaeological record; and
- c.** long-distance mobility influenced central and peripheral regions alike.

We were able to verify all of these premises with two case studies of shifting interregional trading and warrior networks, backed by political alliances. We could further demonstrate that interactions of connected societies are never one-directional: European societies increasingly adopted features from the palatial centres in the eastern Mediterranean, which in turn adopted both warriors and valuable products from the European hinterlands. The final collapse of the centres in the eastern Mediterranean undoubtedly stands testimony to this type of connected fate.

O’BRIEN 2015

William O’Brien, *Prehistoric Copper Mining in Europe, 5500–500 BC*. (Oxford 2015).

Methoden

TORFING 2015

Tobias Torfing, *Neolithic population and summed probability distribution of ¹⁴C-dates*. *Journal of Archaeological Science* **63** (2015), 193–198.

JAS063-0193-Comment1.pdf, JAS063-0193-Reply1.pdf

This paper assesses the use of radiocarbon dates as a population proxy during the north European Mesolithic/Neolithic transition. By addressing data from the Jutland peninsula, it is shown that the sum probability distributions are influenced by three human-inflicted biases. Two of these – changed ritual behaviour and changes of subsistence strategies – refer to past human activity, while the third consists of modern research strategies. The analysis questions the validity of sum probability distributions as a population proxy in a period where a society experiences a transformation process.

Keywords: Neolithic | Demography | Population | Subsistence strategy | Summed probability distribution

Neolithikum

FRANCKEN 2015

Michael Francken, Katerina Harvati & Joachim Wahl, *Soziale Binnengliederung im linearbandkeramischen Gräberfeld von Schwetzingen (Rhein-Neckar-Kreis)*. [Archäologisches Korrespondenzblatt 45 \(2015\), 303–317](#).

Die vorliegende Studie widmet sich dem Versuch, für das Gräberfeld von Schwetzingen verwandtschaftliche Gruppierungen zu rekonstruieren und Hinweise auf dessen soziale Gliederung zu gewinnen. Über die Form der Stirnhöhlen konnten innerhalb der ausgewählten Populationsstichprobe mindestens vier Gruppen mit vermutlich verwandtschaftlichen Beziehungen identifiziert werden. Die Gegenüberstellung der einzelnen Gruppen mit den verfügbaren, archäologischen Informationen liefert jedoch keine klar erkennbaren Beziehungen zwischen den Mitgliedern der jeweiligen Gruppierungen und macht damit für das Gräberfeld von Schwetzingen ein Sozialsystem wahrscheinlich, das, ähnlich wie das von H.-Ch. Strien entwickelte Familienmodell zur Bandkeramik, durch Abstammungslinien oder Klanstrukturen geprägt war. Demnach existierten innerhalb der unterschiedlichen sozialen Schichten nicht zwangsläufig direkte verwandtschaftliche Beziehungen, sondern die Ergebnisse deuten vielmehr auf eine hierarchische und erbliche Struktur innerhalb der einzelnen Familienverbände hin. Da bislang keine zum Gräberfeld gehörige Siedlung entdeckt wurde, kann über die anzunehmende Zahl von Kernfamilien nur spekuliert werden. Tatsächlich sind die Aussagemöglichkeiten der Studie aufgrund des eingeschränkten Stichprobenumfangs limitiert und ihre Bedeutung muss durch weitere Untersuchungen dieser Art wie auch durch molekulargenetische Analysen untermauert werden. Dennoch kann sie als erster Schritt bei der Entwicklung einer vielversprechenden Methode zur Analyse von Familienstrukturen angesehen werden.

Politik Archäologie

SHOTT 2015

Michael J. Shott et al., *Pros and Cons of Consulting Collectors*. [SAArchRec 15 \(2015\), 11–39](#).

Michael J. Shott, Bonnie Pitblado: Introduction to the theme

Joe Watkins: Private property rights versus heritage ownership

Jim Cox: Collaboration in archaeology between professionals and amateur collectors

Robert Connolly: Avocational archaeologists and the designation of a world heritage site

Lynn E. Fisher, Susan K. Harris, Rainer Schreg, Corina Knipper: The benefits and burdens of private artifact collections

Ted Goebel: Grave consequences – crossing the line with collectors

S. Terry Childs: Pragmatic considerations for responsible collectors who donate their collections to museums

Bonnie Pitblado, Michael J. Shott: The present and future of archaeologist-collector collaboration

Story or Book

GAWNE 2015

Richard Gawne, *The cultural evolution, An ambitious attempt to show that human culture evolves from the bottom up falls flat.* [science 350 \(2015\), 639.](#)

The Evolution of Everything, How New Ideas Emerge. Matt Ridley. Harper, 2015. 366 pp.

Matt Ridley attempts to demonstrate that the complex systems that define the modern world, including our economies, educational systems, population structures, governments, and religions, emerged on their own and did not arise as a result of purposeful human action.

REVIEW 2015

Spooky Action at a Distance. [science 350 \(2015\), 639.](#)

Spooky Action at a Distance. George Musser. Scientific American/Farrar, Straus and Giroux, 2015. 296 pp.

The concept of nonlocality, wherein a particle can influence the behavior of another particle even if they are miles apart, is, according to George Musser, “the mother of all physics riddles.” Indeed, the notion that an object can have an effect on another object no matter the distance between them has implications for how we understand everything from black holes to gravity. In just under 300 pages, Musser deftly traces the history of our quest to understand this curious phenomenon, covering an ambitious breadth of challenging topics from string theory to the multiverse to the unification of physics.