

References

Aktuell

CRESSEY 2015

Daniel Cressey, *The Cannabis Experiment*. [nature 524 \(2015\), 280–283](#).

As marijuana use becomes more acceptable, researchers are scrambling to answer key questions about the drug.

A 2008 study in New Zealand found that smoking pot increased the risk of lung cancer by 8% for each ‘jointyear’ (the equivalent of smoking a joint per day for one year), even after taking tobacco use into account. But other studies have found little to no correlation with lung cancer, even for heavy users.

The difficulty, says Valerie Curran, a psycho pharmacologist at University College London, lies in teasing apart correlation and causation, because “there are so many confounders”. For example, adolescents who use cannabis are probably also drinking excessive amounts of alcohol and engaging in other risky activities. Attributing the effects to one particular substance or behaviour is therefore very difficult.

Nor has the Netherlands seen a huge spike in use of harder drugs, dampening fears that marijuana serves as a gateway to more dangerous substances such as heroin and cocaine. The message from the Netherlands, says Franz Trautmann, a drug policy researcher at the Trimbos Institute in Utrecht, the Netherlands, is that “a very liberal policy doesn’t lead to a skyrocketing prevalence”. Rather, cannabis is endemic, he says. “We can’t control this through prohibition. This is something which more and more is recognized.”

HABYARIMANA 2015

James Habyarimana & William Jack, *Results of a large-scale randomized behavior change intervention on road safety in Kenya*. [PNAS 112 \(2015\), E4661–E4670](#).

Road accidents kill 1.3 million people each year, most in the developing world. We test the efficacy of evocative messages, delivered on stickers placed inside Kenyan matatus, or minibuses, in reducing road accidents. We randomize the intervention, which nudges passengers to complain to their drivers directly, across 12,000 vehicles and find that on average it reduces insurance claims rates of matatus by between one-quarter and one-third and is associated with 140 fewer road accidents per year than predicted. Messages promoting collective action are especially effective, and evocative images are an important motivator. Average maximum speeds and average moving speeds are 1–2 km/h lower in vehicles assigned to treatment. We cannot reject the null hypothesis of no placebo effect. We were unable to discern any impact of a complementary radio campaign on insurance claims. Finally, the sticker intervention is inexpensive: we estimate the cost-effectiveness of the most impactful stickers to be between \$10 and \$45 per disability-adjusted life-year saved.

Keywords: road safety | governance | accountability | consumer empowerment

Significance: Road accidents kill 1.3 million people each year, most in the developing world. Evocative messages inside Kenyan matatus, or mini-buses, that promote passenger agency and legitimize complaints against dangerous driving are found to reduce average maximum speeds and average moving speeds by 1–2 km/h

and insurance claims by between one-quarter and one-third. The cost-effectiveness of the most impactful stickers is between \$ 10 and \$ 45 per disability-adjusted life-year saved.

SMEETS 2015

Paul Smeets, Rob Bauer & Uri Gneezy, *Giving behavior of millionaires*. [PNAS 112 \(2015\), 10641–10644](#).

[pnas112-10641-Supplement1.xlsx](#), [pnas112-10641-Supplement2.xlsx](#)

This paper studies conditions influencing the generosity of wealthy people. We conduct incentivized experiments with individuals who have at least E1 million in their bank account. The results show that millionaires are more generous toward low-income individuals in a giving situation when the other participant has no power, than in a strategic setting, where the other participant can punish unfair behavior. Moreover, the level of giving by millionaires is higher than in any other previous study. Our findings have important implications for charities and financial institutions that deal with wealthy individuals.

Keywords: philanthropy | donations | experimental economics | dictator game | ultimatum game

Significance: Wealthy individuals play an important role in charitable giving. We present evidence that millionaires give more than any other group studied in the literature. This holds particularly in a clear giving situation. In our study, millionaires either participated in a dictator game or an ultimatum game and they either interacted with another millionaire or with a low-income individual. In the dictator game, the millionaire decides how to split an amount between herself and a recipient who has no power. In the ultimatum game, the receiver needs to approve the proposer's proposal; otherwise, both players are paid zero. Millionaires give more to a low-income participant in the dictator game than in the more strategic ultimatum game.

VANORIO 2015

Tiziana Vanorio & Waruntorn Kanitpanyacharoen, *Rock physics of fibrous rocks akin to Roman concrete explains uplifts at Campi Flegrei Caldera*. [science 349 \(2015\), 617–621](#).

[s349-0617-Supplement.pdf](#)

Uplifts in the Campi Flegrei caldera reach values unsurpassed anywhere in the world (≈ 2 meters). Despite the marked deformation, the release of strain appears delayed. The rock physics analysis of well cores highlights the presence of two horizons, above and below the seismogenic area, underlying a coupled process. The basement is a calc-silicate rock housing hydrothermal decarbonation reactions, which provide lime-rich fluids. The caprock above the seismogenic area has a pozzolanic composition and a fibril-rich matrix that results from lime-pozzolanic reactions. These findings provide evidence for a natural process reflecting that characterizing the cementitious pastes in modern and Roman concrete. The formation of fibrous minerals by intertwining filaments confers shear and tensile strength to the caprock, contributing to its ductility and increased resistance to fracture.

WEISEL 2015

Ori Weisel & Shaul Shalvi, *The collaborative roots of corruption*. [PNAS 112 \(2015\), 10651–10656](#).

[pnas112-10651-Supplement1.xlsx](#), [pnas112-10651-Supplement2.xlsx](#)

Cooperation is essential for completing tasks that individuals cannot accomplish alone. Whereas the benefits of cooperation are clear, little is known about its possible negative aspects. Introducing a novel sequential dyadic die-rolling paradigm,

we show that collaborative settings provide fertile ground for the emergence of corruption. In the main experimental treatment the outcomes of the two players are perfectly aligned. Player A privately rolls a die, reports the result to player B, who then privately rolls and reports the result as well. Both players are paid the value of the reports if, and only if, they are identical (e.g., if both report 6, each earns E6). Because rolls are truly private, players can inflate their profit by misreporting the actual outcomes. Indeed, the proportion of reported doubles was 489 % higher than the expected proportion assuming honesty, 48 % higher than when individuals rolled and reported alone, and 96 % higher than when lies only benefited the other player. Breaking the alignment in payoffs between player A and player B reduced the extent of brazen lying. Despite player B's central role in determining whether a double was reported, modifying the incentive structure of either player A or player B had nearly identical effects on the frequency of reported doubles. Our results highlight the role of collaboration—particularly on equal terms—in shaping corruption. These findings fit a functional perspective on morality. When facing opposing moral sentiments—to be honest vs. to join forces in collaboration—people often opt for engaging in corrupt collaboration.

Keywords: cooperation | corruption | decision making | behavioral ethics | behavioral economics

Significance: Recent financial scandals highlight the devastating consequences of corruption. While much is known about individual immoral behavior, little is known about the collaborative roots of corruption. In a novel experimental paradigm, people could adhere to one of two competing moral norms: collaborate vs. be honest. Whereas collaborative settings may boost honesty due to increased observability, accountability, and reluctance to force others to become accomplices, we show that collaboration, particularly on equal terms, is inductive to the emergence of corruption. When partners' profits are not aligned, or when individuals complete a comparable task alone, corruption levels drop. These findings reveal a dark side of collaboration, suggesting that human cooperative tendencies, and not merely greed, take part in shaping corruption.

Anthropologie

ALMÉCIJA 2015

Sergio Almécija, Jeroen B. Smaers & William L. Jungers, *The evolution of human and ape hand proportions*. [Nature Communications 6 \(2015\), 7717](#). DOI:10.1038/ncomms8717.

NatComm06-7717-Supplement.pdf

Human hands are distinguished from apes by possessing longer thumbs relative to fingers. However, this simple ape-human dichotomy fails to provide an adequate framework for testing competing hypotheses of human evolution and for reconstructing the morphology of the last common ancestor (LCA) of humans and chimpanzees. We inspect human and ape hand-length proportions using phylogenetically informed morphometric analyses and test alternative models of evolution along the anthropoid tree of life, including fossils like the plesiomorphic ape *Proconsul heseloni* and the hominins *Ardipithecus ramidus* and *Australopithecus sediba*. Our results reveal high levels of hand disparity among modern hominoids, which are explained by different evolutionary processes: autapomorphic evolution in hylobatids (extreme digital and thumb elongation), convergent adaptation between chimpanzees and orangutans (digital elongation) and comparatively little change in gorillas and hominins. The human (and australopith) high thumb-to-digits ratio required little change since the LCA, and was acquired convergently with other highly dexterous anthropoids.

ARNAL 2015

Luc H. Arnal, Adeen Flinker, Andreas Kleinschmidt, Anne-Lise Giraud & David Poeppel, *Human Screams Occupy a Privileged Niche in the Communication Soundscape*. *Current Biology* **25** (2015), 2051–2056.

Arnal et al. show that, unlike speech, screams exploit a privileged acoustic attribute: “roughness.” Sounds in this modulation regime specifically target sub-cortical brain areas involved in danger processing and improve behavior in various ways, suggesting that this acoustic niche may be preserved to insure efficient warning.

Highlights

- We provide the first evidence of a special acoustic regime (“roughness”) for screams
- Roughness is used in both natural and artificial alarm signals
- Roughness confers a behavioral advantage to react rapidly and efficiently
- Acoustic roughness selectively activates amygdala, involved in danger processing

ATIR 2015

Stav Atir, Emily Rosenzweig & David Dunning, *When Knowledge Knows No Bounds, Self-Perceived Expertise Predicts Claims of Impossible Knowledge*. *Psychological Science* **26** (2015), 1295–1303.

People overestimate their knowledge, at times claiming knowledge of concepts, events, and people that do not exist and cannot be known, a phenomenon called overclaiming. What underlies assertions of such impossible knowledge? We found that people overclaim to the extent that they perceive their personal expertise favorably. Studies 1a and 1b showed that self-perceived financial knowledge positively predicts claiming knowledge of nonexistent financial concepts, independent of actual knowledge. Study 2 demonstrated that self-perceived knowledge within specific domains (e.g., biology) is associated specifically with overclaiming within those domains. In Study 3, warning participants that some of the concepts they saw were fictitious did not reduce the relationship between self-perceived knowledge and overclaiming, which suggests that this relationship is not driven by impression management. In Study 4, boosting self-perceived expertise in geography prompted assertions of familiarity with nonexistent places, which supports a causal role for self-perceived expertise in claiming impossible knowledge.

Keywords: knowledge level | judgment | inference | thinking | open data

DOMÍNGUEZ-RODRIGO 2015

Manuel Domínguez-Rodrigo et al., *Earliest modern human-like hand bone from a new >1.84-million-year-old site at Olduvai in Tanzania*. *Nature Communications* **6** (2015), 7987. DOI:10.1038/ncomms8987.

NatComm06-7987-Supplement.pdf, pnas112-03253-Comment1.pdf, pnas112-03253-Reply1.pdf

Manuel Domínguez-Rodrigo, Travis Rayne Pickering, Sergio Almécija, Jason L. Heaton, Enrique Baquedano, Audax Mabulla & David UribeArrea

Modern humans are characterized by specialized hand morphology that is associated with advanced manipulative skills. Thus, there is important debate in paleoanthropology about the possible cause–effect relationship of this modern human-like (MHL) hand anatomy, its associated grips and the invention and use of stone tools by early hominins. Here we describe and analyse Olduvai Hominin (OH) 86, a manual proximal phalanx from the recently discovered >1.84-million-year-old (Ma) Philip Tobias Korongo (PTK) site at Olduvai Gorge (Tanzania). OH

86 represents the earliest MHL hand bone in the fossil record, of a size and shape that differs not only from all australopiths, but also from the phalangeal bones of the penecontemporaneous and geographically proximate OH 7 partial hand skeleton (part of the *Homo habilis* holotype). The discovery of OH 86 suggests that a hominin with a more MHL postcranium co-existed with *Paranthropus boisei* and *Homo habilis* at Olduvai during Bed I times.

Bibel

NGO 2015

ROBIN NGO & MEGAN SAUTER (Hrsg.), *Who Was Jesus? Exploring the History of Jesus' Life*. (2015).

Jesus is the central figure of Christianity, the world's largest religion. As a teacher in first-century Galilee, he influenced countless people. Yet many questions today surround this enigmatic person. Where was he really born—Bethlehem or Nazareth? Did he marry? Is there evidence outside of the Bible that proves he actually walked the earth? This Biblical Archaeology Society eBook, *Who Was Jesus? Exploring the History of Jesus' Life*—drawn from articles in *Biblical Archaeology Review* and *Bible Review*—examines the history of Jesus' life, from where he was born, where he grew up and whether there is extra-Biblical evidence for his existence.

IV Introduction by Robin Ngo

1 Did Jesus Exist? Searching for Evidence Beyond the Bible by Lawrence Mykytiuk

15 Jesus' Birthplace and Jesus' Home by Philip J. King

18 Has Jesus' Nazareth House Been Found? by Ken Dark

25 Did Jesus Marry? by Birger A. Pearson

31 Sidebar: "From Saint to Sinner"

34 Was Jesus' Last Supper a Seder? by Jonathan Klawans

46 Sidebar: "When Passover Begins: The Synoptics versus John"

SHANKS 2015

Hershel Shanks, *Predilections, Is the "Brother of Jesus" Inscription a Forgery?* *Biblical Archaeology Review* 41 (2015), v, 54–58.

My conclusion is that Chris has a predilection for concluding that an inscription on any object that is unprovenanced (i.e., whose source is unknown) is a modern forgery.

Golan also produced other strong evidence that he has owned the ossuary since this early time—all without realizing the significance of the inscription. He says he had no idea of the possible significance of the inscription until André Lemaire saw it and explained it to him. In short, if he owned the ossuary since the mid-1970s without recognizing it for what it was, this makes it extremely unlikely that he forged the inscription.

USSISHKIN 2015

David Ussishkin, Lily Singer-Avitz & Hershel Shanks, *Kadesh-Barnea, In the Bible and on the ground*. *Biblical Archaeology Review* 41 (2015), v, 36–44.

While tending Jethro's flocks in Midian, Moses received the call at the Mountain of God (Horeb or Sinai) (Exodus 3:1). And thus began the trek to the Promised Land.

This so-called “Midianite Hypothesis” as to the location of Mt. Sinai has recently found support in excavations in the northwestern corner of Saudi Arabia, just south of the Jordanian border. In contrast to the empty Sinai at the supposed time of the Exodus, Midianite territory in this area of Saudi Arabia was thriving. Settlements dating to this period were found all over, according to surveys conducted by Peter Parr.

It was here that Parr found the characteristic Midianite Ware, later called Qurayyah Painted Ware—the same pottery found at Kadesh-Barnea and dated to the period when the Exodus is traditionally dated. If the Israelites were in Midian, as the Bible says they were, there is no reason to doubt that they proceeded to Kadesh-Barnea. In short, Tell Kadesh-Barnea is the site the Bible refers to in Exodus and Deuteronomy.

ZEVIT 2015

Ziony Zevit, *Was Eve Made from Adam’s Rib—or His Baculum?* [Biblical Archaeology Review](#) **41** (2015), v, 32–35.

Datierung

CROMBÉ 2015

Philippe Crombé, Roger Langohr & Geertrui Louwagie, *Mesolithic hearth-pits: fact or fantasy? A reassessment based on the evidence from the sites of Doel and Verrebroek (Belgium)*. [Journal of Archaeological Science](#) **61** (2015), 158–171.

In this paper we contest the anthropogenic character of small and shallow charcoal-filled pits which occur in large numbers on Mesolithic sites in the coversand area of the northwest European plain. Despite uncertainties about their exact function, they have so far been generally interpreted as hearthpits. Following this assumption, these features have been systematically used for dating Mesolithic sites and reconstructing Mesolithic settlement systems. However, chronological inconsistencies as well as the absence of in situ burning evidence call into question this anthropogenic interpretation. Based on anthracological, chronological and pedological evidence from two sites in NW Belgium (Verrebroek and Doel), it is argued that most of these features may be of natural origin. In particular there is good resemblance in morphology, distribution and content with remains of abandoned and burnt ant mounds. The paper ends with highlighting the consequences of this new interpretation, while suggesting new lines of investigation for future Mesolithic research.

Keywords: Mesolithic | Hearths | Radiocarbon dating | Ants | Forest fires

Energie

ALLY 2015

Moonis R. Ally, Jeffrey D. Munk, Van D. Baxter & Anthony C. Gehl, *Exergy analysis of a two-stage ground source heat pump with a vertical bore for residential space conditioning under simulated occupancy*. [Applied Energy](#) **155** (2015), 502–514.

This twelve-month field study analyzes the performance of a 7.56 kW (2.16-ton) water-to-air-ground source heat pump (WA-GSHP) to satisfy domestic space conditioning loads in a 253 m² house in a mixed-humid climate in the United States.

The practical feasibility of using the ground as a source of renewable energy is clearly demonstrated. Better than 75 % of the energy needed for space heating was extracted from the ground. The average monthly electricity consumption for space conditioning was only 40 kW h at summer and winter thermostat set points of 24.4 °C and 21.7 °C, respectively. The WA-GSHP shared the same 94.5 m vertical bore ground loop with a separate water-to-water ground-source heat pump (WW-GSHP) for meeting domestic hot water needs in the same house. Sources of systemic irreversibility, the main cause of lost work, are identified using Exergy and energy analysis.

Quantifying the sources of Exergy and energy losses is essential for further systemic improvements. The research findings suggest that the WA-GSHPs are a practical and viable technology to reduce primary energy consumption and greenhouse gas emissions under the IECC 2012 Standard, as well as the European Union (EU) 2020 targets of using renewable energy resources.

Keywords: Sustainability | Exergy | Availability | Geothermal | Heat pump

HEJAZI 2015

Mohamad I. Hejazi et al., *21st century United States emissions mitigation could increase water stress more than the climate change it is mitigating*. [PNAS **112** \(2015\), 10635–10640](#).

Mohamad I. Hejazi, Nathalie Voisin, Lu Liu, Lisa M. Bramer, Daniel C. Fortin, John E. Hathaway, Maoyi Huang, Page Kyle, L. Ruby Leung, Hong-Yi Li, Ying Liu, Pralit L. Patel, Trenton C. Pulsipher, Jennie S. Rice, Teklu K. Tesfa, Chris R. Vernon & Yuyu Zhou

There is evidence that warming leads to greater evapotranspiration and surface drying, thus contributing to increasing intensity and duration of drought and implying that mitigation would reduce water stresses. However, understanding the overall impact of climate change mitigation on water resources requires accounting for the second part of the equation, i.e., the impact of mitigation-induced changes in water demands from human activities. By using integrated, high-resolution models of human and natural system processes to understand potential synergies and/or constraints within the climate–energy–water nexus, we show that in the United States, over the course of the 21st century and under one set of consistent socioeconomics, the reductions in water stress from slower rates of climate change resulting from emission mitigation are overwhelmed by the increased water stress from the emissions mitigation itself. The finding that the human dimension outpaces the benefits from mitigating climate change is contradictory to the general perception that climate change mitigation improves water conditions. This research shows the potential for unintended and negative consequences of climate change mitigation.

Keywords: climate change | mitigation | water deficit | Earth system model | integrated assessment

Significance: Devising sustainable climate change mitigation policies with attention to potential synergies and constraints within the climate–energy–water nexus is the subject of ongoing integrated modeling efforts. This study employs a regional integrated assessment model and a regional Earth system model at high spatial and temporal resolutions in the United States to compare the implications of two of the representative concentration pathways under consistent socioeconomics. The results clearly show, for the first time to our knowledge, that climate change mitigation policies, if not designed with careful attention to water resources, could increase the magnitude, spatial coverage, and frequency of water deficits. The results challenge the general perception that mitigation that aims at reducing warming also would alleviate water deficits in the future.

Isotope

RICHARDS 2015

M. P. Richards, I. Karavanić, P. Pettitt & P. Miracle, *Isotope and faunal evidence for high levels of freshwater fish consumption by Late Glacial humans at the Late Upper Palaeolithic site of Šandalja II, Istria, Croatia*. [Journal of Archaeological Science](#) **61** (2015), 204–212.

Here we report on isotope and faunal evidence for intensive use of freshwater resources by Late Upper Palaeolithic humans from the Šandalja II site in Croatia. Carbon and nitrogen bone collagen isotopic analysis of humans and fauna from the site indicate that the main protein source in human diets at this time was freshwater fish, which is in contrast to the vertebrate remains that show a high abundance of large terrestrial herbivores from the Late Upper Palaeolithic levels at the site. These data add to the growing body of research that shows an increasing intensification in the use of aquatic resources in Europe towards the end of the Pleistocene.

Keywords: Late Upper Palaeolithic | Palaeodiet | Isotopes | Freshwater fish

Klima

BIBI 2015

Faysal Bibi & Wolfgang Kiessling, *Continuous evolutionary change in Plio-Pleistocene mammals of eastern Africa*. [PNAS](#) **112** (2015), 10623–10628.

[pnas112-10623-Supplement1.xlsx](#), [pnas112-10623-Supplement2.xlsx](#)

Much debate has revolved around the question of whether the mode of evolutionary and ecological turnover in the fossil record of African mammals was continuous or pulsed, and the degree to which faunal turnover tracked changes in global climate. Here, we assembled and analyzed large specimen databases of the fossil record of eastern African Bovidae (antelopes) and Turkana Basin large mammals. Our results indicate that speciation and extinction proceeded continuously throughout the Pliocene and Pleistocene, as did increases in the relative abundance of arid-adapted bovids, and in bovid body mass. Species durations were similar among clades with different ecological attributes. Occupancy patterns were unimodal, with long and nearly symmetrical origination and extinction phases. A single origination pulse may be present at 2.0–1.75 Ma, but besides this, there is no evidence that evolutionary or ecological changes in the eastern African record tracked rapid, 100,000-y-scale changes in global climate. Rather, eastern African large mammal evolution tracked global or regional climatic trends at long (million year) time scales, while local, basin-scale changes (e.g., tectonic or hydrographic) and biotic interactions ruled at shorter timescales.

Keywords: turnover | Plio-Pleistocene | mammals | Bovidae | Africa

Significance: Many have argued that major developments in mammalian (including human) evolution were timed with large and sudden changes to Earth's climate. Our new analyses of the eastern African Plio-Pleistocene mammalian fossil record indicate that most species originations and extinctions took place continuously and gradually. This means that evolution was not clustered in short intervals, nor were sudden global climatic changes the main cause of species extinction in the past. Global climate may have influenced longer-term (million year) evolutionary trends, but local environmental changes and species interactions were more important at shorter (100,000 y) time scales.

COOPER 2015

Alan Cooper, Chris Turney, Konrad A. Hughen, Barry W. Brook, H. Gregory McDonald & Corey J. A. Bradshaw, *Abrupt warming events drove Late Pleistocene Holarctic megafaunal turnover*. [science](#) **349** (2015), 602–606.

s349-0602-Supplement1.pdf, s349-0602-Supplement2.xlsx, s349-0602-Supplement3.xlsx

The mechanisms of Late Pleistocene megafauna extinctions remain fiercely contested, with human impact or climate change cited as principal drivers. We compared ancient DNA and radiocarbon data from 31 detailed time series of regional megafaunal extinctions and replacements over the past 56,000 years with standard and new combined records of Northern Hemisphere climate in the Late Pleistocene. Unexpectedly, rapid climate changes associated with interstadial warming events are strongly associated with the regional replacement or extinction of major genetic clades or species of megafauna. The presence of many cryptic biotic transitions before the Pleistocene/Holocene boundary revealed by ancient DNA confirms the importance of climate change in megafaunal population extinctions and suggests that metapopulation structures necessary to survive such repeated and rapid climatic shifts were susceptible to human impacts.

Methoden

DWORK 2015

Cynthia Dwork, Vitaly Feldman, Moritz Hardt, Toniann Pitassi, Omer Reingold & Aaron Roth, *The reusable holdout, Preserving validity in adaptive data analysis*. [science](#) **349** (2015), 636–638.

s349-0636-Supplement1.pdf, s349-0636-Supplement2.py

Misapplication of statistical data analysis is a common cause of spurious discoveries in scientific research. Existing approaches to ensuring the validity of inferences drawn from data assume a fixed procedure to be performed, selected before the data are examined. In common practice, however, data analysis is an intrinsically adaptive process, with new analyses generated on the basis of data exploration, as well as the results of previous analyses on the same data. We demonstrate a new approach for addressing the challenges of adaptivity based on insights from privacy-preserving data analysis. As an application, we show how to safely reuse a holdout data set many times to validate the results of adaptively chosen analyses.

Neolithikum

ANTOLÍN 2015

Ferran Antolín, Stefanie Jacomet & Ramon Buxó, *The hard knock life, Archaeobotanical data on farming practices during the Neolithic (5400–2300 cal BC) in the NE of the Iberian Peninsula*. [Journal of Archaeological Science](#) **61** (2015), 90–104.

The archaeobotanical (seeds and fruits) dataset of the northeast of the Iberian Peninsula for the Neolithic period is presented and discussed in this paper in order to approach how early farmers produced their crops and how farming spread in the region. Ten crop plants were identified, including cereals (*Triticum aestivum/durum/turgidum* L., *Triticum dicoccum* Schübl., *Triticum monococcum* L., *Hordeum vulgare* L./ *distichon* L. and *Hordeum vulgare* var. *nudum*), legumes

(*Vicia faba* L., *Lens culinaris* Medik. and *Pisum sativum* L.) as well as oil plants (*Linum usitatissimum* L. and *Papaver somniferum* L.). Two different traditions were observed by looking at the crop assemblages of the early Neolithic (5400–4500 cal BC). It is proposed that one group of farmers settled in the northeastern area of the region and chose to grow freethreshing cereals, especially naked wheat, while a second group settled in the central Catalan coast and along the Llobregat river and included glume wheats as important crops. These different patterns seem to survive during the middle Neolithic period, when naked barley becomes the main crop at some sites, maybe due to contacts with northern groups. The late Neolithic seems to translate into further changes but more investigations are needed. The weed assemblages available are meagre but the lack of indicators for shifting agriculture allowed confirming that crops were sown in permanent fields. It is concluded that early Neolithic settlements must have been more sedentary and farming practices more effort-demanding than previously thought.

Keywords: Prehistoric agriculture | Crop | Weed | Early farmers | Taphonomy

Physik

SCHLICHTING 2015

H. Joachim Schlichting, *Das Rätsel von Mpemba*. [Spektrum der Wissenschaft 2015](#), vi, 40–41.

Wenn eine warme Flüssigkeit schneller gefriert als eine kalte, spielen möglicherweise Strömungsbewegungen die entscheidende Rolle.

Story or Book

VIKBLADH 2015

Oliver Vikbladh, *Identity crisis*. [science 349](#) (2015), 595.

A scientific exploration of our sense of self.

The Man Who Wasn't There, Investigations into the Strange New Science of the Self. Anil Ananthaswamy. Dutton, 2015. 317 pp.

A skilled science journalist, Ananthaswamy excels at making theoretical concepts and experimental procedures both comprehensible and compelling. Using anecdotes and personal observations, he places the people and the science in a broader context by drawing connections to philosophy, sociology, art, and spirituality. We learn about Dostoevsky's ecstatic epileptic seizures, what the sociologist Pierre Bourdieu's concept of "the habitus" might tell us about Alzheimer's patients, and how Indian Buddhist folklore questions the very existence of a self.

Another challenge confronting Ananthaswamy is that the science of most of these disorders is still very young. Perhaps somewhat premature in its conception, but with curiosity and heart, *The Man Who Wasn't There* outlines the early progress of a captivating research field that is likely to redefine the way we think about both science and ourselves.