

References

Afrika

DERAT 2021

Marie-Laure Derat et al., *The rock-cut churches of Lalibela and the cave church of Washa Mika'el, Troglodytism and the Christianisation of the Ethiopian Highlands*. *Antiquity* **95** (2021), 467–486.

The monolithic churches of Lalibela are commonly regarded as evidence for the shift of the Christian kingdom of Ethiopia from Aksum to the Ethiopian Highlands during the thirteenth century AD. Recent research, however, has shown that the rock-cut churches were not created ex nihilo. New archaeological evidence has emerged for an earlier, local troglodytic culture, particularly at Washa Mika'el, further illuminating the cosmopolitan society that existed in medieval Ethiopia. This article considers the role played by this troglodytic culture in the Christianisation of the Ethiopian Highlands and how it attests continuity with its predecessors, especially in the way that sculpted decor are perpetuated and transformed in the frame of a new religious background.

Keywords: Ethiopia | Lalibela | Washa Mika'el | Christianisation | troglodytism | rock-cut church

Marie-Laure Derat, Claire Bosc-Tiessé, Antoine Garric, Romain Mensan, François-Xavier Fauvelle, Yves Gleize & Anne-Lise Goujon

GONZÁLEZ-RUIBAL 2021

Alfredo González-Ruibal, *The cosmopolitan borderland, Western Ethiopia c. AD 600–1800*. *Antiquity* **95** (2021), 530–548.

[Antiquity095-0530-Supplement.pdf](#)

The western Ethiopian borderland is remote from all centres of power in the Horn of Africa. As a result, local communities have often been regarded by scholars and state agents alike as isolated and antiquated. The picture that emerges from archaeological research, however, is more complex: borderland societies have, at different times from the mid first millennium AD onwards, embraced, reworked or rejected innovations from neighbouring polities. Indeed, borderland groups developed a type of 'vernacular cosmopolitanism' integrating foreign customs and artefacts. As an old multicultural borderland spanning many centuries and involving a range of state and non-state actors, the region offers important lessons for our understanding of frontier societies in Africa and beyond.

Keywords: Ethiopia | Sudan | Horn of Africa | long-distance trade | connectivity | cosmopolitanism

INSOLL 2021

Timothy Insoll, *The archaeology of complexity and cosmopolitanism in medieval Ethiopia, An introduction*. *Antiquity* **95** (2021), 450–466.

Archaeology increasingly attests the complex and cosmopolitan nature of societies in medieval Ethiopia (c. seventh to early eighteenth centuries AD). Without negating the existence of relations of dominance and periods of isolation, key emergent themes of such research are pluralism and interaction. Four religious traditions are relevant to this theme: Islam, Judaism, Christianity and Indigenous religions. This article introduces a special section of contributions on medieval

Ethiopia and sets the scheme by highlighting the temporality of cosmopolitanism as episodic rather than continuous. The following articles address varied aspects of this cosmopolitanism, identifying issues of general relevance for studies of the archaeology of religion, as well as the need for further research in Ethiopia.

Keywords: Ethiopia | medieval | Christianity | Islam | Judaism | cosmopolitanism | Indigenous religions

INSOLL 2021

Timothy Insoll, Nadia Khalaf, Rachel MacLean, Hannah Parsons-Morgan, Nicholas Tait, Jane Gaastra, Alemseged Beldados, Alexandre, *Material cosmopolitanism, The entrepot of Harlaa as an Islamic gateway to eastern Ethiopia*. *Antiquity* **95** (2021), 487–507.

The investigation of Islamic archaeology in Ethiopia has until recently been neglected. Excavations at Harlaa, a large urban centre in eastern Ethiopia, are now beginning to redress this lack of research attention. By establishing occupation and material sequences, and by assessing the chronology and material markers of Islamisation, recent work provides important new insight on the presence and role of Muslims and Islamic practice at Harlaa, and in the Horn of Africa more generally. The results challenge previous assumptions of cultural homogeneity, instead indicating the development of cosmopolitanism. They also suggest a possible historical identity for Harlaa: as Hubät/ Hobat, the capital of the Ha«rla» sultanate.

Keywords: Ethiopia | Harlaa | Islamic archaeology | Islamisation | cosmopolitanism

Timothy Insoll, Nadia Khalaf, Rachel MacLean, Hannah Parsons-Morgan, Nicholas Tait, Jane Gaastra, Alemseged Beldados, Alexander J. E. Pryor, Laura Evis & Laure Dussubieux

LOISEAU 2021

Julien Loiseau, Simon Dorso, Yves Gleize, David Ollivier, Deresse Ayenachew, Hiluf Berhe, Amélie Chekroun & Bertrand Hirsch, *Bilet and the wider world, New insights into the archaeology of Islam in Tigray*. *Antiquity* **95** (2021), 508–529.

Recent archaeological investigations in eastern Tigray, Ethiopia, have revealed extensive evidence for medieval Muslim communities. Although the settlement of Muslims near modern Kwiha was previously attested by epigraphic evidence, its exact location remained unknown. Fieldwork, with the support of the ERC project ‘HornEast’, has identified and excavated the cemetery at Bilet—the first excavation of a Muslim cemetery in the Ethiopian Highlands. The Results reveal the existence of flourishing cosmopolitanism among Muslim communities in the very heart of the Zagwe Christian kingdom. These Muslim communities developed from both foreign and local populations and were well connected with the wider Islamicate world.

Keywords: Ethiopia | Tigray | medieval | Islam | funerary archaeology | Arabic epigraphy

STAHL 2005

ANN BROWER STAHL (Hrsg.), *African archaeology, A critical introduction*. Blackwell studies in global archaeology 3 (Malden 2005).

Aktuell

CALLAWAY 2021

Ewen Callaway, *Pfizer Covid Vaccine Protects Against Worrying Variants*. *nature* **593** (2021), 325–326.

Data from Qatar provide strongest evidence yet that vaccines can stop strains thought to pose a threat.

Qatar, where more than one-third of the population has received at least one dose of the vaccine, might provide an early glimpse at how the worst coronavirus variants can be controlled. Abu-Raddad says there is evidence that the Pfizer–BioNTech vaccine might also be highly effective at blocking transmission of B.1.351. And after cases of the variant peaked in mid-April, he says, “things have been going extremely well; the numbers are going down very, very rapidly”.

FARIA 2021

Nuno R. Faria et al., *Genomics and epidemiology of the P.1 SARS-CoV-2 lineage in Manaus, Brazil*. *science* **372** (2021), 815–821.

[DOI:10.1126/science.abh2644](https://doi.org/10.1126/science.abh2644).

[s372-0815-Supplement.pdf](#)

Cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in Manaus, Brazil, resurged in late 2020 despite previously high levels of infection. Genome sequencing of viruses sampled in Manaus between November 2020 and January 2021 revealed the emergence and circulation of a novel SARS-CoV-2 variant of concern. Lineage P.1 acquired 17 mutations, including a trio in the spike protein (K417T, E484K, and N501Y) associated with increased binding to the human ACE2 (angiotensin-converting enzyme 2) receptor. Molecular clock analysis shows that P.1 emergence occurred around mid-November 2020 and was preceded by a period of faster molecular evolution. Using a two-category dynamical model that integrates genomic and mortality data, we estimate that P.1 may be 1.7- to 2.4-fold more transmissible and that previous (non-P.1) infection provides 54 to 79% of the protection against infection with P.1 that it provides against non-P.1 lineages. Enhanced global genomic surveillance of variants of concern, which may exhibit increased transmissibility and/or immune evasion, is critical to accelerate pandemic responsiveness.

Nuno R. Faria, Thomas A. Mellan, Charles Whittaker, Ingra M. Claro, Darlan da S. Candido, Swapnil Mishra, Myuki A. E. Crispim, Flavia C. S. Sales, Iwona Hawryluk, John T. McCrone, Ruben J. G. Hulswit, Lucas A. M. Franco, Mariana S. Ramundo, Jaqueline G. de Jesus, Pamela S. Andrade, Thais M. Coletti, Giulia M. Ferreira, Camila A. M. Silva, Erika R. Manuli, Rafael H. M. Pereira, Pedro S. Peixoto, Moritz U. G. Kraemer, Nelson Gaburo Jr., Cecilia da C. Camilo, Henrique Hoeltgebaum, William M. Souza, Esmenia C. Rocha, Leandro M. de Souza, Mariana C. de Pinho, Leonardo J. T. Araujo, Frederico S. V. Malta, Aline B. de Lima, Joice do P. Silva, Danielle A. G. Zauli, Alessandro C. de S. Ferreira, Ricardo P. Schnekenberg, Daniel J. Laydon, Patrick G. T. Walker, Hannah M. Schlüter, Ana L. P. dos Santos, Maria S. Vidal, Valentina S. Del Caro, Rosinaldo M. F. Filho, Helem M. dos Santos, Renato S. Aguiar, José L. Proença-Modena, Bruce Nelson, James A. Hay, Mélodie Monod, Xenia Miscouridou, Helen Coupland, Raphael Sonabend, Michaela Vollmer, Axel Gandy, Carlos A. Prete Jr., Vitor H. Nascimento, Marc A. Suchard, Thomas A. Bowden, Sergei L. K. Pond, Chieh-Hsi Wu, Oliver Ratmann, Neil M. Ferguson, Christopher Dye, Nick J. Loman, Philippe Lemey, Andrew Rambaut, Nelson A. Fraiji, Maria do P. S. S. Carvalho, Oliver G. Pybus, Seth Flaxman, Samir Bhatt & Ester C. Sabino

MALLAPATY 2021

Smriti Mallapaty, *How Many Deaths Are Acceptable Post-Pandemic?* *nature* **593** (2021), 326–327.

Nations are weighing up the COVID-19 burden they will tolerate to open economies after vaccinations.

A year ago, the fear of an unknown virus galvanized governments into implementing harsh social restrictions. The risks have since been articulated more clearly and people have begun to factor them into their daily lives, says Medley. This means that people might be more willing than before to put up with the risk of a certain level of hospitalization and death, and that the bar for imposing social restrictions is now higher. But the exact position of that bar is still unknown — and it could come down again if new variants threaten gains from vaccination campaigns, he says.

VAIDYANATHAN 2021

Gayathri Vaidyanathan, *Coronavirus variants are spreading in India, What scientists know so far.* *nature* **593** (2021), 321–322.

Variants including B.1.617 have been linked to India’s surge in infections. Researchers are hurrying to determine how much of a threat they pose.

For example, the B.1.351 variant has been linked to much steeper drops in the potency of neutralizing antibodies, but studies in humans suggest that many vaccines remain highly effective against that variant, particularly at preventing severe disease. For these reasons, the vaccines are likely to remain effective against B.1.617 and to limit severe disease. “The vaccine is still working,” says Yadav. “If you get vaccinated, you will be protected, and the severity will be less.” Nevertheless, “the surge in cases in India and scenes witnessed there is of grave concern internationally”, Nick Loman, a microbial genomicist and bioinformatician at the University of Birmingham, UK, told the Science Media Centre in London after the United Kingdom declared B.1.617.2 a variant of concern. “This variant will now be one to watch.”

Anthropologie

LOUYS 2021

Julien Louys et al., *No evidence for widespread island extinctions after Pleistocene hominin arrival.* *PNAS* **118** (2021), e2023005118.

[pnas118-e2023005118-Supplement.pdf](#)

The arrival of modern humans into previously unoccupied island ecosystems is closely linked to widespread extinction, and a key reason cited for Pleistocene megafauna extinction is anthropogenic overhunting. A common assumption based on late Holocene records is that humans always negatively impact insular biotas, which requires an extrapolation of recent human behavior and technology into the archaeological past. Hominins have been on islands since at least the early Pleistocene and *Homo sapiens* for at least 50 thousand y (ka). Over such lengthy intervals it is scarcely surprising that significant evolutionary, behavioral, and cultural changes occurred. However, the deep-time link between human arrival and island extinctions has never been explored globally. Here, we examine archaeological and paleontological records of all Pleistocene islands with a documented hominin presence to examine whether humans have always been destructive agents. We show that extinctions at a global level cannot be associated with Pleistocene hominin arrival based on current data and are difficult to disentangle from records of environmental change. It is not until the Holocene that large-scale changes in

technology, dispersal, demography, and human behavior visibly affect island ecosystems. The extinction acceleration we are currently experiencing is thus not inherent but rather part of a more recent cultural complex.

Keywords: Holocene | island biogeography | human colonization | megafauna | extinction

Julien Louys, Todd J. Braje, Chun-Hsiang Chang, Richard Cosgrove, Scott M. Fitzpatrick, Masaki Fujita, Stuart Hawkins, Thomas Ingicco, Ai Kawamura, Ross D. E. MacPhee, Matthew C. McDowell, Hanneke J. M. Meijer, Philip J. Piper, Patrick Roberts, Alan H. Simmons, Gerrit van den Bergh, Alexandra van der Geer, Shimona Kealy & Sue O'Connor

Significance: We provide global assessment of the possible link between Pleistocene hominin arrival and island extinction. The existing records on islands around the world do not support a significant and detrimental impact on island biotas following island colonization prior to the Holocene. This suggests that models using island extinctions as evidence in support of anthropogenic megafaunal overhunting, or as extensions of continental-level extinctions, need to be reconsidered.

YATES 2021

James A. Fellows Yates, Irina M. Velsko & Christina Warinner et al., *The evolution and changing ecology of the African hominid oral microbiome*. [PNAS 118 \(2021\), e2021655118](#).

[pnas118-e2021655118-Supplement.pdf](#)

The oral microbiome plays key roles in human biology, health, and disease, but little is known about the global diversity, variation, or evolution of this microbial community. To better understand the evolution and changing ecology of the human oral microbiome, we analyzed 124 dental biofilm metagenomes from humans, including Neanderthals and Late Pleistocene to present-day modern humans, chimpanzees, and gorillas, as well as New World howler monkeys for comparison. We find that a core microbiome of primarily biofilm structural taxa has been maintained throughout African hominid evolution, and these microbial groups are also shared with howler monkeys, suggesting that they have been important oral members since before the catarrhine-platyrrhine split ca. 40 Mya. However, community structure and individual microbial phylogenies do not closely reflect host relationships, and the dental biofilms of *Homo* and chimpanzees are distinguished by major taxonomic and functional differences. Reconstructing oral metagenomes from up to 100 thousand years ago, we show that the microbial profiles of both Neanderthals and modern humans are highly similar, sharing functional adaptations in nutrient metabolism. These include an apparent *Homo*-specific acquisition of salivary amylase-binding capability by oral streptococci, suggesting microbial coadaptation with host diet. We additionally find evidence of shared genetic diversity in the oral bacteria of Neanderthal and Upper Paleolithic modern humans that is not observed in later modern human populations. Differences in the oral microbiomes of African hominids provide insights into human evolution, the ancestral state of the human microbiome, and a temporal framework for understanding microbial health and disease.

Keywords: dental calculus | microbiome | Neanderthal | primate | salivary amylase

James A. Fellows Yates, Irina M. Velsko, Franziska Aron, Cosimo Posth, Courtney A. Hofman, Rita M. Austin, Cody E. Parker, Allison E. Mann, Kathrin Ngele, Kathryn Weedman Arthur, John W. Arthur, Catherine C. Bauer, Isabelle Crevecoeur, Christophe Cupillard, Matthew C. Curtis, Love Daln, Marta Daz-Zorita Bonilla, J. Carlos Dez Fernandez-Lomana, Dorothe G. Drucker, Elena Escribano Escrib, Michael Francken, Victoria E. Gibbon, Manuel R. Gonzalez

Morales, Ana Grande Mateu, Katerina Harvati,^a Amanda G. Henrya, Louise Humphreya, Mario Menndez, Duan Mihailovica, Marco Peresania,^a Sofa Rodriguez Morodera, Mirjana Roksandica, Hlne Rougiera, Sandra Szelova, Jay T. Stocka,^{a,a}, Lawrence Guy Strausa, Jir Svobodaa,^a, Barbara Temanna,^a, Michael J. Walkera, Robert C. Power,^a, Cecil M. Lewis, Krithivasan Sankaranarayanan, Katerina Guschanskia,^{a,b}, Richard W. Wranghama, Floyd E. Dewhirsta,^a, Domingo C. Salazar-Garcaa, Johannes Krause,^b, Alexander Herbig & Christina Warinner

Significance: The microbiome plays key roles in human health, but little is known about its evolution. We investigate the evolutionary history of the African hominid oral microbiome by analyzing dental biofilms of humans and Neanderthals spanning the past 100,000 years and comparing them with those of chimpanzees, gorillas, and howler monkeys. We identify 10 core bacterial genera that have been maintained within the human lineage and play key biofilm structural roles. However, many remain understudied and unnamed. We find major taxonomic and functional differences between the oral microbiomes of Homo and chimpanzees but a high degree of similarity between Neanderthals and modern humans, including an apparent Homospecific acquisition of starch digestion capability in oral streptococci, suggesting microbial coadaptation with host diet.

Bibel

DERSHOWITZ 2021

Idan Dershowitz, *The Valediction of Moses, A Proto-Biblical Book*. Forschungen zum Alten Testament 145 (Tübingen 2021).

Under scrutiny, every objection to the authenticity of Shapira's manuscripts falls flat. Moreover, in light of our expanded comparanda following the many new epigraphic finds since 1883, various features once regarded as proof that the Shapira manuscripts were forgeries now appear to validate their antiquity. In the next chapter, I introduce new evidence that points to the same conclusion.

Datierung

REGEV 2021

Johanna Regev, Yuval Gadot, Helena Roth, Joe Uziel, Ortal Chalaf, Doron Ben-Ami, Eugenia Mintz, Lior Regev & Elisabetta Boare, *Middle Bronze Age Jerusalem, Recalculating its Character and Chronology*. *Radiocarbon* (2021), preprint, 1–31. DOI:10.1017/RDC.2021.21.

Radiocarbon2021.05-Regev-Supplement.pdf

The following paper presents the results of radiocarbon (¹⁴C) dating of Middle Bronze Age (MB) contexts in Jerusalem. The dates, sampled with microarchaeology methods from three different locations along the eastern slopes of the city's ancient core, reveal that Jerusalem was initially settled in the early phases of the period, with public architecture first appearing in the beginning of the 19th century BC and continued to develop until the 17th century BC. At that time, a curious gap in settlement is noted until the 16th century BC, when the site is resettled. The construction of this phase continued into the early 15th century BC. The dates presented are discussed in both the site-level, as well as their far-reaching implications regarding MB regional chronology. It is suggested here that the high chronology, dating the Middle Bronze Age between 2000 and 1600 BC is difficult to reconcile with dates from many sites. In contrast, a more localized chronology should be adopted, with the Middle Bronze Age continuing into the

early 15th century BC in certain parts of the southern Levant, such as the region of Jerusalem.

Keywords: Execration Texts | high chronology | Jerusalem | low chronology | microarchaeology | Middle Bronze Age | radiocarbon.

Johanna Regev, Yuval Gadot, Helena Roth, Joe Uziel, Ortal Chalaf, Doron Ben-Ami, Eugenia Mintz, Lior Regev & Elisabetta Boaretto

Judentum

HALLEWI 1140

Jehuda Hallewi, *Das Buch al-Chazari, Aus dem Arabischen des des Abu-l-Hasan Jehuda Hallewi übersetzt von Dr. Hartwig Hirschfeld.* (Wiesbaden 2000). Nachdruck der Ausgabe 1885 von Wilhelm Koebner, Breslau.

Klima

CLUETT 2021

Allison A. Cluett & Elizabeth K. Thomas, *Summer warmth of the past six interglacials on Greenland.* [PNAS 118 \(2021\), e2022916118.](#)

[pnas118-e2022916118-Supplement.pdf](#)

The relative warmth of mid-to-late Pleistocene interglacials on Greenland has remained unknown, leading to debates about the regional climate forcing that caused past retreat of the Greenland Ice Sheet (GrIS). We analyze the hydrogen isotopic composition of terrestrial biomarkers in Labrador Sea sediments through interglacials of the past 600,000 y to infer millennial-scale summer warmth on southern Greenland. Here, we reconstruct exceptionally warm summers in Marine Isotope Stage (MIS) 5e, concurrent with strong Northern Hemisphere summer insolation. In contrast, “superinterglacial” MIS11 demonstrated only moderate warmth, sustained throughout a prolonged interval of elevated atmospheric carbon dioxide. Strong inferred GrIS retreat during MIS11 relative to MIS5e suggests an indirect relationship between maximum summer temperature and cumulative interglacial mass loss, indicating strong GrIS sensitivity to duration of regional warmth and elevated atmospheric carbon dioxide.

Keywords: interglacial | Greenland Ice Sheet | Last Interglacial | Arctic | Marine Isotope Stage 11

Significance: Recurring glacial retreat and advance eroded most sedimentary records of pre-Holocene interglacials around Greenland, hindering development of long terrestrial paleoclimate records and leading to questions about what climate conditions caused past Greenland Ice Sheet (GrIS) retreat. We infer changes in summer temperature on Greenland from terrestrial biomarkers preserved in marine sediments through the past six interglacials. We find that exceptionally warm summers occurred during MIS5e when the GrIS remained relatively large, in contrast with moderate warmth through MIS11, when the GrIS was likely substantially reduced. Our results suggest that sustained summer warmth, a likely future if anthropogenic carbon emissions are not dramatically reduced, will be more detrimental to future stability of the GrIS than a brief period of exceptional warmth.

FRANK 2019

Patrick Frank, *Propagation of Error and the Reliability of Global Air Temperature Projections*. *Frontiers in Earth Science* **7** (2019), 223, 1–17.

The reliability of general circulation climate model (GCM) global air temperature projections is evaluated for the first time, by way of propagation of model calibration error. An extensive series of demonstrations show that GCM air temperature projections are just linear extrapolations of fractional greenhouse gas (GHG) forcing. Linear projections are subject to linear propagation of error. A directly relevant GCM calibration metric is the annual average $\pm 12.1\%$ error in global annual average cloud fraction produced within CMIP5 climate models. This error is strongly pair-wise correlated across models, implying a source in deficient theory. The resulting long-wave cloud forcing (LWCF) error introduces an annual average ≈ 4 W/m² simulation uncertainty is ± 114 • larger than the annual average ≈ 0.035 W/m² change in tropospheric thermal energy flux produced by increasing GHG forcing since 1979. Tropospheric thermal energy flux is the determinant of global air temperature. Uncertainty in simulated tropospheric thermal energy flux imposes uncertainty on projected air temperature. Propagation of LWCF thermal energy flux error through the historically relevant 1988 projections of GISS Model II scenarios A, B, and C, the IPCC SRES scenarios CCC, B1, A1B, and A2, and the RCP scenarios of the 2013 IPCC Fifth Assessment Report, uncovers a ± 15 C uncertainty in air temperature at the end of a centennial-scale projection. Analogously large but previously unrecognized uncertainties must therefore exist in all the past and present air temperature projections and hindcasts of even advanced climate models. The unavoidable conclusion is that an anthropogenic air temperature signal cannot have been, nor presently can be, evidenced in climate observables.

Keywords: GCM | climate model | propagated error | theory-error | uncertainty | air-temperature projection

MOTTL 2021

Ondřej Mottl, Suzette G. A. Flantua & John W. Williams et al., *Global acceleration in rates of vegetation change over the past 18,000 years*. *science* **372** (2021), 860–864.

s372-0860-Supplement.pdf

Global vegetation over the past 18,000 years has been transformed first by the climate changes that accompanied the last deglaciation and again by increasing human pressures; however, the magnitude and patterns of rates of vegetation change are poorly understood globally. Using a compilation of 1181 fossil pollen sequences and newly developed statistical methods, we detect a worldwide acceleration in the rates of vegetation compositional change beginning between 4.6 and 2.9 thousand years ago that is globally unprecedented over the past 18,000 years in both magnitude and extent. Late Holocene rates of change equal or exceed the deglacial rates for all continents, which suggests that the scale of human effects on terrestrial ecosystems exceeds even the climate-driven transformations of the last deglaciation. The acceleration of biodiversity change demonstrated in ecological datasets from the past century began millennia ago.

Ondřej Mottl, Suzette G. A. Flantua, Kuber P. Bhatta, Vivian A. Felde, Thomas Giesecke, Simon Goring, Eric C. Grimm, Simon Haberle, Henry Hooghiemstra, Sarah Ivory, Petr Kuneš, Steffen Wolters, Alistair W. R. Seddon & John W. Williams

Neolithikum

GOMART 2015

Louise Gomart, Lamys Hachem, Caroline Hamon, Francois Giligny & Michael Ilett, *Household integration in Neolithic villages, A new model for the Linear Pottery Culture in west-central Europe*. [Journal of Anthropological Archaeology](#) **40** (2015), 230–249.

This paper proposes a novel interpretation of Neolithic Linear Pottery (LBK) settlement organisation, based on comparative analysis of data on subsistence (faunal remains, macrolithic tools) and on pottery manufacturing techniques and apprenticeship networks in the settlement of Cuiry-lès-Chaudardes (Aisne, France). This new model explains differences in house size in terms of both varying degrees of economic maturity and particular functional status. We argue that each house is self-sufficient in terms of subsistence, but at the same time maintained reciprocal relations with a number of other houses. Our model also describes how the stages of establishment, assimilation and integration of family units evolved within the village community. We ultimately offer insights into the social rules, stable over time, underlying matrimonial networks and mobility patterns in the LBK.

Keywords: Neolithic | LBK | Faunal remains | Macrolithics | Pottery | Houses | Settlement organisation | Consumption and production networks | Social rules | Mobility

Politik

MILKMAN 2021

Katherine L. Milkman et al., *A megastudy of text-based nudges encouraging patients to get vaccinated at an upcoming doctor’s appointment*. [PNAS](#) **118** (2021), e2101165118.

[pnas118-e2101165118-Supplement.pdf](#)

Many Americans fail to get life-saving vaccines each year, and the availability of a vaccine for COVID-19 makes the challenge of encouraging vaccination more urgent than ever. We present a large field experiment (N = 47,306) testing 19 nudges delivered to patients via text message and designed to boost adoption of the influenza vaccine. Our findings suggest that text messages sent prior to a primary care visit can boost vaccination rates by an average of 5%. Overall, interventions performed better when they were 1) framed as reminders to get flu shots that were already reserved for the patient and 2) congruent with the sort of communications patients expected to receive from their healthcare provider (i.e., not surprising, casual, or interactive). The best-performing intervention in our study reminded patients twice to get their flu shot at their upcoming doctor’s appointment and indicated it was reserved for them. This successful script could be used as a template for campaigns to encourage the adoption of life-saving vaccines, including against COVID-19.

Keywords: vaccination | COVID-19 | nudge | influenza | field experiment

Katherine L. Milkman, Mitesh S. Patel, Linnea Gandhi, Heather N. Graci, Dena M. Gromet, Hung Ho, Joseph S. Kay, Timothy W. Lee, Modupe Akinola, John Be-shears, Jonathan E. Bogard, Alison Bутtenheim, Christopher F. Chabris, Gretchen B. Chapman, James J. Choi, Hengchen Dai, Craig R. Fox, Amir Goren, Matthew D. Hilchey, Jillian Hmurovic, Leslie K. John, Dean Karlan, Melanie Kim, David Laibson, Cait Lambertson, Brigitte C. Madrian, Michelle N. Meyer, Maria Modanu, Jimin Nam, Todd Rogers, Renante Rondina, Silvia Saccardo, Maheen Shermohammed, Dilip Soman, Jehan Sparks, Caleb Warren, Megan Weber, Ron Berman,

Chalanda N. Evans, Christopher K. Snider, Eli Tsukayama, Christophe Van den Bulte, Kevin G. Volpp & Angela L. Duckworth

Story or Book

ABBOTT 2021

Alison Abbott, *The singing neutrino Nobel laureate*. [nature 593 \(2021\), 334–335](#).

From desert to gold mine — Frederick Reines was a larger-than-life physicist who did larger-than-life experiments.

Chasing the Ghost: Nobelist Fred Reines and the Neutrino. Leonard A. Cole. World Scientific (2021)

Cole doesn't dig deeply enough into these issues, so it is hard understand exactly how they were resolved. He also scatters descriptions of the relevant physics rather unsatisfactorily across chapters. However, Cole is hardly an independent voice, being Reines's admiring younger cousin.

Nonetheless, *Chasing the Ghost* nicely describes how successful the derring-do attitude of individual researchers can be. Reines variously comes across as endearing, admirable and irritating. He could alarm his team by tugging on cables to test electronics as he whistled his way through a lab, and was quick to over-interpret results. But he was a hands-off, respectful lab chief who addressed his team with old-fashioned formality as 'Mr' (they seem to have all been men) — even as he ignored their rights to holidays. Those interviewed all tell how they fell under his spell, and worked hard to please him.

POWER 2021

Robert C. Power, *Seasonal survival strategies in the Lower Palaeolithic*. [Antiquity 95 \(2021\), 553–554](#).

As Hosfield rightly points out, the lack of scholarly attention to this seasonal perspective is a strange omission in approaches to early hominins, particularly in the study of northern latitudes where seasonality is the principal constraint on biological diversity.

Robert Hosfield. 2020. *The earliest Europeans, a year in the life: seasonal survival strategies in the Lower Palaeolithic*. Oxford: Oxbow; 9781785707612 paperback £24.99.

The lively debate about how hominins were able to navigate the energetic and thermal challenges of colder climes is thoroughly covered. In the absence of reliable evidence for the regular control of fire, this represents a substantial challenge. There is little evidence for shelter construction, and even if advanced shelter design were available it would not explain sufficiently how hominins coped with winter conditions that dropped far below zero in parts of their range.