Liste erstellt am 2023-01-05

References

Aktuell

Falconi 2022

Tania M. Alarcon Falconi, Fatemeh Kazemiparkouhi, Brittany Schwartz & David L. MacIntosh, *Inconsistencies in domestic land use change study*. PNAS **119** (2022), e2213961119.

The Lark 2022 analysis appears to have excluded the 10 y of data (2011–2020) that do not support their conclusion. We also note that the price of corn is strongly correlated with crude oil price.

Lark 2022

Tyler J. Lark et al., *Economic red herrings and resistance to new modeling hinder progress in assessing ethanol's land use change*, *Reply to Falconi et al.* PNAS **119** (2022), e2216091119.

Observations like those by Falconi et al. about correlations among corn prices, corn use for ethanol, and crude oil prices are correct but irrelevant to the efects of the RFS on crop prices. Around the time of the RFS, ethanol transitioned to a major user of corn and the price and planted area of corn have remained above their pre-RFS trends every year since then despite continued yield improvements (Fig. 1).

Tyler J. Lark, Nathan P. Hendricks, Aaron Smith, Nicholas Pates, Seth A. Spawn-Lee, Matthew Bougie, Eric G. Booth, Christopher J. Kucharik & Holly K. Gibbs

McConnell 2022

Joseph R. McConnell, Nathan J. Chellman & Andreas Stohl, *Reply to: Black carbon attribution*, *Replying to R. M. Newnham Nature http://doi.org/10.1038/s41586-022-05518-y (2022)*. nature **612** (2022), e20–e21.

First, implicit in Newnham's suggestions1 is that lake-sediment and peat-bog charcoal records can be interpreted as proxies of atmospheric emissions. In fact, charcoal records indicate only the presence of fire activity in the nearby landscape and provide little or no quantitative information regarding the magnitude of those emissions. Conversely, records of black-carbon deposition from ice cores are directly proportional to atmospheric concentrations and therefore to emissions—although these are potentially modulated by atmospheric-transport and deposition processes.

Msemburi 2022

William Msemburi, Ariel Karlinsky, Victoria Knutson, Serge Aleshin-Guendel, Somnath Chatterji & Jon Wakefield, *The WHO estimates of excess mortality associated with the COVID-19 pandemic*. nature (2022), preprint, 1–24. DOI:10.1038/s41586-022-05522-2.

n2022.12-Msemburi-Supplement.pdf

The World Health Organization has a mandate to compile and disseminate statistics on mortality, and we have been tracking the progression of the COVID-19

pandemic since the beginning of 2020. Reported statistics on COVID-19 mortality are problematic for many countries owing to variations in testing access, differential diagnostic capacity and inconsistent certification of COVID-19 as cause of death. Beyond what is directly attributable to it, the pandemic has caused extensive collateral damage that has led to losses of lives and livelihoods. Here we report a comprehensive and consistent measurement of the impact of the COVID-19 pandemic by estimating excess deaths, by month, for 2020 and 2021. We predict the pandemic period all-cause deaths in locations lacking complete reported data using an overdispersed Poisson count framework that applies Bayesian inference techniques to quantify uncertainty. We estimate 14.83 million excess deaths globally, 2.74 times more deaths than the 5.42 million reported as due to COVID-19 for the period. There are wide variations in the excess death estimates across the six World Health Organization regions. We describe the data and methods used to generate these estimates and highlight the need for better reporting where gaps persist. We discuss various summary measures, and the hazards of ranking countries' epidemic responses.

Newnham 2022

Rewi M. Newnham, *Black carbon attribution, Arising from J. R. McConnell et al. Nature http://doi.org/10.1038/s41586-021-03858-9 (2021).* nature **612** (2022), e18–e19.

More recently, other studies have revitalized a previous argument that climate change during the pre-European era may have strongly influenced early Maori settlement patterns and land-use practices during a 'transitional' phase of New Zealand prehistory. This phase, commencing around ad 1400 and coinciding broadly with the Little Ice Age, represents the abandonment of conventional settlements in the southern regions of New Zealand in response to less-hospitable climates, which is consistent with the decreasing charcoal curves of that time. This depopulating of southern New Zealand and the associated reduction in burning coincides with the peak Antarctic rBC levels that were nevertheless attributed to Maori burning by McConnell et al.

Shrestha 2022

Nabin K. Shrestha, Patrick C. Burke, Amy S. Nowacki, James F. Simon, Amanda Hagen & Steven M. Gordon, *Effectiveness of the Coronavirus Disease 2019 (COVID-19) Bivalent Vaccine.* medRxiv **2022**, Dec. 19. DOI:10.1101/2022.12.17.22283625.

Among 51011 working-aged Cleveland Clinic employees, the bivalent COVID-19 vaccine booster was 30 % effective in preventing infection, during the time when the virus strains dominant in the community were represented in the vaccine.

Background. The purpose of this study was to evaluate whether a bivalent COVID-19 vaccine protects against COVID-19.

Methods. Employees of Cleveland Clinic in employment on the day the bivalent COVID-19 vaccine first became available to employees, were included. The cumulative incidence of COVID-19 was examined over the following weeks. Protection provided by vaccination (analyzed as a time-dependent covariate) was evaluated using Cox proportional hazards regression. The analysis was adjusted for the pandemic phase when the last prior COVID-19 episode occurred, and the number of prior vaccine doses received.

Results. Among 51011 employees, 20689 (41 %) had had a previous documented episode of COVID-19, and 42064 (83 %) had received at least two doses of a COVID-19 vaccine. COVID-19 occurred in 2452 (5 %) during the study. Risk of

COVID-19 increased with time since the most recent prior COVID-19 episode and with the number of vaccine doses previously received. In multivariable analysis, the bivalent vaccinated state was independently associated with lower risk of COVID-19 (HR, .70; 95 % C.I., .61-.80), leading to an estimated vaccine effectiveness (VE) of 30 % (95 % CI, 20-39 %). Compared to last exposure to SARS-CoV-2 within 90 days, last exposure 6-9 months previously was associated with twice the risk of COVID-19, and last exposure 9-12 months previously with 3.5 times the risk.

Conclusions. The bivalent COVID-19 vaccine given to working-aged adults afforded modest protection overall against COVID-19, while the virus strains dominant in the community were those represented in the vaccine.

Keywords: SARS-CoV-2 | COVID-19 | effectiveness | vaccines | bivalent vaccine

Amerika

HANSEN 2022

Richard D. Hansen et al., *LiDAR analyses in the contiguous Mirador-Calakmul Karst Basin, Guatemala, An introduction to new perspectives on regional early Maya socioeconomic and political organization.* Ancient Mesoamerica (2022), preprint, 1–40. DOI:10.1017/S0956536122000244.

AncMAm2022.12-Hansen-Supplement1.tiff, AncMAm2022.12-Hansen-Supplement2.tiff, AncMAm2022.12-Hansen-Supplement3.docx

LiDAR coverage of a large contiguous area within the Mirador-Calakmul Karst Basin (MCKB) of northern Guatemala has identified a concentration of Preclassic Maya sites (ca. 1000 B.C.–A.D. 150) connected by causeways, forming a web of implied social, political, and economic interactions. This article is an introduction to one of the largest, contiguous, regional LiDAR studies published to date in the Maya Lowlands. More than 775 ancient Maya settlements are identified within the MCKB, and 189 more in the surrounding karstic ridge, which we condensed into 417 ancient cities, towns, and villages of at least six preliminary tiers based on surface area, volumetrics, and architectural configurations. Many tiered sites date to the Middle and Late Preclassic periods, as determined by archaeological testing, and volumetrics of contemporaneously constructed and/or occupied architecture with similar morphological characteristics. Monumental architecture, consistent architectural formats, specific site boundaries, water management/ collection facilities, and 177 km of elevated Preclassic causeways suggest labor investments that defy organizational capabilities of lesser polities and potentially portray the strategies of governance in the Preclassic period. Settlement distributions, architectural continuities, chronological contemporaneity, and volumetric considerations of sites provide evidence for early centralized administrative and socio-economic strategies within a defined geographical region.

Richard D. Hansen, Carlos Morales-Aguilar, Josephine Thompson, Ross Ensley, Enrique Hernández, Thomas Schreiner, Edgar Suyuc-Ley & Gustavo Martínez

Biologie

HOU 2022

Yao Hou, Ke Tang, Jingyuan Wang, Danxia Xie & Hanzhe Zhang, *Assortative mating on blood type, Evidence from one million Chinese pregnancies.* PNAS **119** (2022), e2209643119.

Blood type is one of the most fundamental phenotypes in biological, medical, and psychological studies. Using a unique dataset of one million Chinese pregnancies, we find strong evidence from a group of statistical tests for assortative mating on blood type. After controlling for anthropometric and socioeconomic confounders, assortative mating remains robust.

Keywords: assortative mating | blood type | mate choice

Significance: In the human population, spousal pairs have been found to share phenotypes, which demonstrates the highly nonrandom nature of human mate choice. However, assortative mating on blood type—one of the most fundamental phenotypes in biological, medical, and psychological studies—has not been investigated. Using a unique dataset from China, we provide statistical analysis to test whether matching on blood type is nonrandom and ind a set of strong evidence for assortative mating on blood type. The indings are robust after we control for the efect of other possible mechanisms, and show that the spousal concordance on blood type we observe is attributable to not only an individual's mate opportunity but also their mate choice.

Islam

Keim 1873

Theodor Keim, *Celsus' wahres Wort, Älteste Streitschrift antiker Weltanschauung gegen das Christenthum vom Jahr 178 n. Chr.* (Zürich 1873).

Schimmel 2001

Annemarie Schimmel, *Das islamische Jahr, Zeiten und Feste.* (München ^{4}2014).

Isotope

Bishop 2022

Rosie R. Bishop et al., *Scotland's first farmers, New insights into early farming practices in North-west Europe.* Antiquity **96** (2022), 1087–1104.

Antiquity096-1087-Supplement1.pdf, Antiquity096-1087-Supplement2.xlsx

Thirty years after the discovery of an Early Neolithic timber hall at Balbridie in Scotland was reported in Antiquity, new analysis of the site's archaeobotanical assemblage, featuring 20 000 cereal grains preserved when the building burnt down in the early fourth millennium BC, provides new insights into early farming practices. The results of stable isotope analyses of cereals from Balbridie, alongside archaeobotanical and stable isotope results from three other sites, indicate that while cereals were successfully cultivated in well-established plots without manuring at Balbridie, a variety of manuring strategies was implemented at the other sites. These differences reinforce the picture of variability in cultivation practices across Neolithic North-west Europe.

Keywords: Scotland | Neolithic | stable isotopes | cereal cultivation | archaeobotany | agriculture

Rosie R. Bishop, Darren R. Gröcke, Ian Ralston, David Clarke, Daniel H. J. Lee, Alexandra Shepherd, Antonia S. Thomas, Peter A. Rowley-Conwy & Mike J. Church

Kultur

Ezcurra 2022

Exequiel Ezcurra, Paula Ezcurra & Ben Meissner, *Ancient inhabitants of the Basin of Mexico kept an accurate agricultural calendar using sunrise observatories and mountain alignments.* PNAS **119** (2022), e2215615119.

pnas119-e2215615119-Supplement.pdf

In the hot dry spring of monsoon-driven environments, keeping an accurate calendar to regulate the annual planting of crops is of critical importance. Before the Spanish conquest, the Basin of Mexico had a highly productive farming system able to feed its very large population. However, how they managed to keep their farming dates in synchrony with the solar year is not known. In this paper, we show that the observation of sunrise against the Basin's eastern horizon could have provided an accurate solar calendar and that some important sunrise landmarks coincide well with the themes of seasonal festivities described in early codices. We also show that a long stone causeway in the summit of Mount Tlaloc aligns perfectly with the rising sun on February 23 to 24, in coincidence with the Basin's new year in the Mexica calendar. Third, we demonstrate that, when viewed from the sacred Mount Tepeyac in the bottom of the Basin, sunrise aligns with Mount Tlaloc also on February 24. The importance of Mount Tlaloc as a calendric landmark seems to be corroborated by illustrations and texts in ancient Mexica codices. Our indings demonstrate that by using carefully developed alignments with the rugged eastern horizon, the inhabitants of the Basin of Mexico were able to adjust their calendar to keep in synchrony with the solar year and successfully plan their corn harvests.

Keywords: Basin of Mexico | Mesoamerican calendar | pre-Hispanic farming | Mount Tlaloc

Significance: Without the navigational and calendric instruments of the 16th century Europeans (like gnomon, compass, quadrant, or astrolabe), the inhabitants of the Basin of Mexico were able to keep an accurate agricultural calendar that allowed them to plan their agricultural cycle to feed one of the largest population densities on Earth, as well as maintaining rituals associated to the solar seasons. To achieve this, they used the rugged topography of the Basin as a precise solar observatory and also built a high-altitude stone causeway for accurate adjustments of their calendar to the solar year. These Results underscore how a similar goal, such as adjusting the length of the calendar to the solar year, could be achieved with widely diferent technologies.

Ostasien

Liu 2022

Li Liu, Jian Chen, Jiajing Wang, Yanan Zhao & Xingcan Chen, *Archaeological evidence for initial migration of Neolithic Proto Sino-Tibetan speakers from Yellow River valley to Tibetan Plateau.* PNAS **119** (2022), e2212006119.

pnas119-e2212006119-Supplement.pdf

Sino-Tibetan is the second largest language family in the world. Recent linguistic and genetic studies have traced its origin to Neolithic millet farmers in the Yellow River region of China around 8,000 y ago and also suggested that initial divergence among branches of Sino-Tibetan coincided with expansion of the Neolithic Yangshao culture to the west and southwest during the sixth millennium BP.

However, archaeological investigations to date have been insuicient to understand the lifeways of these migrant Proto Sino-Tibetan speakers. Here, we present the results of the interdisciplinary research on the material culture and ritual activities related to the initial southwestward migration of Yangshao populations, based on evidence from microfossil remains on ceramics at three sites in Gansu and Sichuan, regional archaeological contexts, and ethnographic accounts of modern Gyalrong Tibetans. The first Yangshao migrants may have integrated with indigenous hunter-gatherers in the NW Sichuan highlands, and adopted broad-spectrum subsistence strategies, consisting of both millet farming and foraging for local wild resources. Meanwhile, the migrants appear to have retained important ritual traditions previously established in their Yellow River homelands. They prepared qu starter with Monascus mold and rice for brewing alcoholic beverages, which may have been consumed in communal drinking festivals associated with the performance of ritual dancing. Such ritual activities, which to some extent have survived in the skorbrozajiu ceremonies in SW China, may have then played a central role in maintaining and reinforcing cultural identities, social values, and connections with the homelands of the Proto Sino-Tibetan migrants.

Keywords: ceramics | alcoholic fermentation | ritual feasting | rice | bodily social memory

Significance: Sino-Tibetan is the second largest language family in the world, spoken by more than 1.3 billion people, predominately in China. It originated in the Yellow River region around 8,000 y ago and expanded to the Tibetan Plateau by 6,000–5,000 y ago during the Neolithic Yangshao culture. This study presents the archaeological investigation into the lifeways of Proto Sino-Tibetan speakers, who migrated from the Yellow River to the NW Sichuan highlands. They may have integrated with indigenous hunter-gatherers and adopted broad-spectrum subsistence strategies, consisting of millet farming and local wild resource foraging. They retained important ritual traditions, particularly the alcoholic fermentation method and communal ritual drinking associated with dancing performances, which likely helped maintain their cultural identity and social values.

Ozeanien

Sefton 2022

Juliet P. Sefton, Andrew C. Kemp & Mark D. McCoy et al., *Implications of anomalous relative sea-level rise for the peopling of Remote Oceania*. PNAS **119** (2022), e2210863119.

pnas119-e2210863119-Supplement.pdf

Beginning ≈3,500 to 3,300 y B.P., humans voyaged into Remote Oceania. Radiocarbondated archaeological evidence coupled with cultural, linguistic, and genetic traits indicates two primary migration routes: a Southern Hemisphere and a Northern Hemisphere route. These routes are separated by low-lying, equatorial atolls that were settled during secondary migrations ≈1,000 y later after their exposure by relative sea-level fall from a mid-Holocene highstand. High volcanic islands in the Federated States of Micronesia (Pohnpei and Kosrae) also lie between the migration routes and settlement is thought to have occurred during the secondary migrations despite having been above sea level during the initial settlement of Remote Oceania. We reconstruct relative sea level on Pohnpei and Kosrae using radiocarbon-dated mangrove sediment and show that, rather than falling, there was a ≈4.3-m rise over the past ≈5,700 y. This rise, likely driven by subsidence, implies that evidence for early settlement could lie undiscovered below present sea level. The potential for earlier settlement invites reinterpretation of migration pathways into Remote Oceania and monument building. The UNESCO World Heritage

sites of Nan Madol (Pohnpei) and Leluh (Kosrae) were constructed when relative sea level was ≈0.94 m (≈770 to 750 y B.P.) and ≈0.77 m (≈640 to 560 y B.P.) lower than present, respectively. Therefore, it is unlikely that they were originally constructed as islets separated by canals illed with ocean water, which is their prevailing interpretation. Due to subsidence, we propose that these islands and monuments are more vulnerable to future relative sea-level rise than previously identiied.

Keywords: sea level | Micronesia | mangrove | archaeology | Oceania

Juliet P. Sefton, Andrew C. Kemp, Simon E. Engelhart, Joanna C. Ellison, Makan A. Karegar, Blair Charley & Mark D. McCoy

Significance: Settlement of Remote Oceania began ≈3,500 to 3,300 y ago and coincided with falling sea level across the equatorial Paciic Ocean. Archaeological evidence suggests that people arrived on Pohnpei and Kosrae (high islands in Micronesia) ≈1,000 y later than on other high islands. We reconstruct sea level on Pohnpei and Kosrae using mangrove sediment and ind that rather than falling, sea level rose by ≈4.3 m over the past ≈5,700 y because of subsidence. This rise likely submerged coastal evidence for the initial settlement and current estimates of when people arrived are therefore biased young. Our results allow reconsideration of the pathways and interactions between voyaging groups across Remote Oceania, and the interpretation of the Nan Madol and Leluh monuments.

Story or Book

Zangger 2022

Eberhard Zangger, *Were Mycenaeans international traders or just hitchhikers?* Luwian Studies **2022**, Oct. 19.

Jörg Mull, 2022, Towards the Borders of the Bronze Age and Beyond: Mycenaean Long Distance Travel and Its Reflection in Myth. Sidestone Press.

Tin could be extracted from the Kestel/Göltepe mine in the Taurus Mountains in south-central Anatolia. When this mine was exhausted around 2000 BCE, an urgent need arose to obtain tin from deposits much further away. Some evidence suggests that seafarers from Crete satisfied this demand (Woudhuizen 2017). In other words, even before Mycenaeans appeared on the scene, Luwian, Minoan, and probably Thracian and Syrian traders had maintained long-distance trade routes.