Liste erstellt am 2021-04-06

References

Afrika

Fuller 2011

Dorian Q. Fuller, Nicole Boivin, Tom Hoogervorst & Robin Allaby, *Across the Indian Ocean, The prehistoric movement of plants and animals*. Antiquity **85** (2011), 544–558.

Here is a major research project that is peopling the Indian Ocean with prehistoric seafarers exchanging native crops and stock between Africa and India. Not the least exciting part of the work is the authors' contention that the prime movers of this maritime adventurewere not the great empires but a multitude of small-scale entrepreneurs.

Keywords: India | Sri Lanka | Island Southeast Asia | Neolithic | Bronze Age | millet | banana | chicken

Haour 2016

A. Haour, S. Nixon, D. N'Dah, C. Magnavita & A. Livingstone Smith, *The settlement mound of Birnin Lafiya, New evidence from the eastern arc of the Niger River*. Antiquity **90** (2016), 695–710.

Antiquity090-0695-Supplement.pdf

The development of complex social organisation and trade networks during the first and second millennia AD in the Sahel region of West Africa has long been hampered by a paucity of reliable data. Investigations at Birnin Lafiya, a large settlement mound of this period on the eastern arc of the Niger River, help to fill this gap. The site can now be placed within its broader landscape, and discoveries of early mud architecture, circular structures, human burial remains, personal ornamentation and striking potsherd pavements can be contrasted with contemporary sites both within the inland Niger region and at Ife to the south.

Keywords: Niger | fourth–thirteenth centuries AD | settlement mound | potsherd pavement | trade networks | social organisation

Jórdeczka 2011

Maciej Jórdeczka, Halina Króli, Mirosław Masojć & Romuald Schild, *Early Holocene pottery in the Western Desert of Egypt, New data from Nabta Playa*. Antiquity **85** (2011), 99–115.

Dated and stratified potsherds excavated at Nabta Playa belong to the earliest phase of pottery-making in the Sahara — relatively sophisticated bowls decorated with a toothed wheel. The authors explore the origins of postPleistocene settlers in the Sahara and the Nile Valley and discuss what prompted them to make pottery.

Keywords: Nile Valley | Nabta Playa | Early Holocene (10–9k BP) | El Adam | pottery | ceramics

Jórdeczka 2013

Maciej Jórdeczka, Halina Królik, Mirosław Masojć & Romuald Schild, *Hunter–Gatherer Cattle-Keepers of Early Neolithic El Adam Type from Nabta Playa, Latest Discoveries from Site E–06–1*. African Archaeological Review **30** (2013), 253–284.

Further Neolithic encampments and settlements have been explored by the Combined Prehistoric Expedition in the Nabta Playa Basin on the South–WesternDesert border around 100 km west of the Nile Valley. The perfectly preserved stratigraphic setting of the new site, numerous hearths and traces of dwellings, rich cultural material including pottery, radiocarbon dates and presence of bone remains render site E–06–1 an exception on the map of settlements of El Adam communities.

Keywords: Nile Valley | Nabta Playa | Early Holocene | El Adam | Settlement

Mattingly 2013

D. J. Mattingly & M. Sterry, *The first towns in the central Sahara*. Antiquity **87** (2013), 503–518.

At first sight Saharan oases appear unlikely locations for the development of early urban communities. Recent survey work has, however, discovered evidence for complex settlements of the late first millennium BC and early first millennium AD, surrounded and supported by intensive agricultural zones. These settlements, despite their relatively modest size, satisfy the criteria to be considered as towns. The argument presented here not only presents the evidence for their urban status but also argues that it was not agriculture but trade that conjured them into existence. Without the development of trans-Saharan trade, these complex oasis communities would have been unsustainable, and their subsequent economic fortunes were directly linked to the fluctuating scale and direction of that trade.

Keywords: Libya | Fazzan | Old Jarma | Garamantes | urbanism | towns | trans-Saharan trade | irrigation

Osypiński 2016

Piotr Osypiński, Mike W. Morley, Marta Osypińska & Anna M. Kotarba-Morley, *Affad 23, Settlement structures and palaeoenvironments in the Terminal Pleistocene of the Middle Nile Valley, Sudan*. Antiquity **90** (2016), 894–913.

Antiquity090-0894-Supplement.pdf

The Epipalaeolithic of the Levant witnessed important changes in subsistence behaviour, foreshadowing the transition to sedentism and cultivation, but much less is known of contemporary developments in the Middle Nile Valley. Here, Affad 23, a 16 000-year-old settlement, on the margins of a resource-rich, multi-channel floodplain, offers exceptional insights. Unusually good preservation has left the remains of pits and postholes, indicating the construction of temporary shelters and specialised functional zones. The Affad 23 community successfully exploited a wide range of riverine resources, and created a highly organised seasonal camp adjacent to convenient, resource-rich hunting grounds. Surprisingly, they continued to exploit Levallois-like tools, rather than adopting the new technologies (e.g. microliths) that were then evolving in Upper Egypt.

Keywords: Sudan | Nile | Terminal Pleistocene | Epipalaeolithic | epi-Levallois | settlement | posthole | hearth

Riemer 2017

Heiko Riemer, Stefan Kropelin & Andras Zboray, *Climate, styles and archaeology, An integral approach towards an absolute chronology of the rock art in the Libyan Desert (Eastern Sahara)*. Antiquity **91** (2017), 7–23.

Archaeology and palaeoclimatology have provided a strong chronological framework for the Holocene settlement of the central Libyan Desert (Eastern Sahara),

but this does not integrate the abundant rock art that is present. Using an interdisciplinary approach, this article amalgamates primary environmental and climatic evidence, 14C dates, stratigraphy and other chronologically relevant archaeological indicators with a systematic analysis of the relative sequence of local rock art styles derived from superimpositions and weathering. Evidence from each discipline corroborates that of the others, enabling the establishment of an absolute chronological framework for the Holocene rock art in the region.

Keywords: Libya | Sudan | Egypt | Sahara | Holocene | rock art | style | chronology | climate

Aktuell

Callaway 2021

Ewen Callaway & Smriti Mallapaty, *What Scientists Do and Don't Know About the Oxford-Astrazeneca Covid Vaccine*. nature **592** (2021), 15–17.

Results confirming that the vaccine provides strong protection against COVID-19 were welcomed after a pause in roll-outs.

Callaway 2021

Ewen Callaway, *Rare Reactions Might Hold Key to Variant-proof Covid Vaccines*. nature **592** (2021), 20–21.

Some people mount an immune response that can fend off a menagerie of SARS-CoV-2 variants.

Hansen 2021

Christian Holm Hansen, Daniela Michlmayr, Sophie Madeleine Gubbels, Kåre Mølbak & Steen Ethelberg, *Assessment of protection against reinfection with SARS-CoV-2 among 4 million PCR-tested individuals in Denmark in 2020, A population-level observational study*. The Lancet **397** (2021), 1204–1212. DOI:10.1016/S0140-6736(21)00575-4.

Lancet397-1204-Supplement.pdf

Our findings could inform decisions on which groups should be vaccinated and advocate for vaccination of previously infected individuals because natural protection, especially among older people, cannot be relied on.

Hong 2021

Boyeong Hong, Bartosz J. Bonczak, Arpit Gupta, Lorna E. Thorpe & Constantine E. Kontokosta, *Exposure density and neighborhood disparities in COVID-19 infection risk*. PNAS **118** (2021), e2021258118. DOI:10.1073/pnas.2021258118.

pnas118-e2021258118-Supplement.pdf

Although there is increasing awareness of disparities in COVID19 infection risk among vulnerable communities, the effect of behavioral interventions at the scale of individual neighborhoods has not been fully studied. We develop a method to quantify neighborhood activity behaviors at high spatial and temporal resolutions and test whether, and to what extent, behavioral responses to social-distancing policies vary with socioeconomic and demographic characteristics. We define exposure density (Ex.) as a measure of both the localized volume of activity in a defined area and the proportion of activity occurring in distinct land-use types.

Using detailed neighborhood data for New York City, we quantify neighborhood exposure density using anonymized smartphone geolocation data over a 3-mo period covering more than 12 million unique devices and rasterize granular land-use information to contextualize observed activity. Next, we analyze disparities in community social distancing by estimating variations in neighborhood activity by land-use type before and after a mandated stay-at-home order. Finally, we evaluate the effects of localized demographic, socioeconomic, and built-environment density characteristics on infection rates and deaths in order to identify disparities in health outcomes related to exposure risk. Our findings demonstrate distinct behavioral patterns across neighborhoods after the stay-at-home order and that these variations in exposure density had a direct and measurable impact on the risk of infection. Notably, we find that an additional 10 % reduction in exposure density citywide could have saved between 1,849 and 4,068 lives during the study period, predominantly in lower-income and minority communities.

Keywords: mobility behavior | neighborhood disparities | COVID-19 | computational modeling | geolocation data

Significance: We present a computational approach to measure exposure density at high spatial and temporal resolution to understand neighborhood disparities in transmission risk of COVID19. By integrating geolocation data and granular land-use information, we are able to establish both the extent of activity in a particular neighborhood and the nature of that activity across residential, nonresidential, and outdoor activities. We then analyze the differential behavioral response to social-distancing policies based on local risk factors, builtenvironment characteristics, and socioeconomic inequality. Our results highlight the significant disparities in health outcomes for racial and ethnic minorities and lower-income households. Exposure density provides an additional metric to further explain and understand the disparate impact of COVID-19 on vulnerable communities.

Lewis 2021

Dyani Lewis, *The Challenges of Making Indoors Safe*. nature **592** (2021), 22–25.

Risks of catching COVID shoot up when virus particles accumulate in buildings, but it's not clear how best to improve ventilation.

Vogel 2021

By Gretchen Vogel & Kai Kupferschmidt, *Side effect worry grows for AstraZeneca vaccine*. science **372** (2021), 14–15. DOI:10.1126/science.372.6537.14.

Some nations limit shot to older people, as probe of clotting disorders continues

Biologie

Matamales 2021

Miriam Matamales, *How dopamine leads to hallucinations*. science **372** (2021), 33–34.

An increase of dopamine in the striatum virtualizes a nonexistent auditory signal in mice.

Schmack 2021

K. Schmack, M. Bosc, T. Ott, J. F. Sturgill & A. Kepecs, *Striatal dopamine mediates hallucination-like perception in mice*. science **372** (2021), eabf4740.

s372-eabf4740-Supplement.pdf

Hallucinations, a central symptom of psychotic disorders, are attributed to excessive dopamine in the brain. However, the neural circuit mechanisms by which dopamine produces hallucinations remain elusive, largely because hallucinations have been challenging to study in model organisms. We developed a task to quantify hallucination-like perception in mice. Hallucination-like percepts, defined as high-confidence false detections, increased after hallucination-related manipulations in mice and correlated with self-reported hallucinations in humans. Hallucination-like percepts were preceded by elevated striatal dopamine levels, could be induced by optogenetic stimulation of mesostriatal dopamine neurons, and could be reversed by the antipsychotic drug haloperidol. These findings reveal a causal role for dopamine-dependent striatal circuits in hallucination-like perception and open new avenues to develop circuit-based treatments for psychotic disorders.

Whiten 2021

Andrew Whiten, *The burgeoning reach of animal culture*. science **372** (2021), eabe6514.

Culture can be defined as all that is learned from others and is repeatedly transmitted in this way, forming traditions that may be inherited by successive generations. This cultural form of inheritance was once thought specific to humans, but research over the past 70 years has instead revealed it to be widespread in nature, permeating the lives of a diversity of animals, including all major classes of vertebrates. Recent studies suggest that culture's reach may extend also to invertebrates—notably, insects. In the present century, the reach of animal culture has been found to extend across many different behavioral domains and to rest on a suite of social learning processes facilitated by a variety of selective biases that enhance the efficiency and adaptiveness of learning. Far-reaching implications, for disciplines from evolutionary biology to anthropology and conservation policies, are increasingly being explored.

Energie

McKuin 2021

Brandi McKuin, Andrew Zumkehr, Jenny Ta, Roger Bales, Joshua H. Viers, Tapan Pathak & J. Elliott Campbell, *Energy and water co-benefits from covering canals with solar panels*. Nature Sustainability (2021), preprint, 1–12. DOI:10.1038/s41893-021-00693-8.

NatSust2021.04-McKuin-Supplement.pdf

Solar power development over canals is an emerging response to the energy–water–food nexus that can result in multiple benefits for water and energy infrastructure. Case studies of over-canal solar photovoltaic arrays have demonstrated enhanced photovoltaic performance due to the cooler microclimate next to the canal. In addition, shade from the photovoltaic panels has been shown to mitigate evaporation and potentially mitigate aquatic weed growth. However, the evaporation savings and financial co-benefits have not been quantified across major canal systems. Here we use regional hydrologic and techno-economic simulations of solar photovoltaic panels covering California's 6,350 km canal network, which is the world's largest conveyance system and covers a wide range of climates, insolation rates and water costs. We find that over-canal solar could reduce annual evaporation by an average of 39 ± 12 thousand m3 per km of canal. Furthermore, the

financial benefits from shading the canals outweigh the added costs of the cable-support structures required to span the canals. The net present value of over-canal solar exceeds conventional overground solar by 20–50 %, challenging the convention of leaving canals uncovered and calling into question our understanding of the most economic locations for solar power.

Klima

Christ 2021

Andrew J. Christ & Paul R. Bierman et al., *A multimillion-year-old record of Greenland vegetation and glacial history preserved in sediment beneath 1.4 km of ice at Camp Century.* PNAS **118** (2021), e2021442118.

pnas118-e2021442118-Supplement.pdf

Understanding the history of the Greenland Ice Sheet (GrIS) is critical for determining its sensitivity to warming and contribution to sea level; however, that history is poorly known before the last interglacial. Most knowledge comes from interpretation of marine sediment, an indirect record of past ice-sheet extent and behavior. Subglacial sediment and rock, retrieved at the base of ice cores, provide terrestrial evidence for GrIS behavior during the Pleistocene. Here, we use multiple methods to determine GrIS history from subglacial sediment at the base of the Camp Century ice core collected in 1966. This material contains a stratigraphic record of glaciation and vegetation in northwestern Greenland spanning the Pleistocene. Enriched stable isotopes of pore-ice suggest precipitation at lower elevations implying ice-sheet absence. Plant macrofossils and biomarkers in the sediment indicate that paleo-ecosystems from previous interglacial periods are preserved beneath the GrIS. Cosmogenic 26Al/10Be and luminescence data bracket the burial of the lower-most sediment between $<3.2 \pm 0.4$ Ma and >0.7 to 1.4 Ma. In the upper-most sediment, cosmogenic 26Al/10Be data require exposure within the last 1.0 ± 0.1 My. The unique subglacial sedimentary record from Camp Century documents at least two episodes of ice-free, vegetated conditions, each followed by glaciation. The lower sediment derives from an Early Pleistocene GrIS advance. 26Al/10Be ratios in the upper-most sediment match those in subglacial bedrock from central Greenland, suggesting similar ice-cover histories across the GrIS. We conclude that the GrIS persisted through much of the Pleistocene but melted and reformed at least once since 1.1 Ma.

Keywords: Pleistocene | ice core | Arctic | climate | ice sheet

Andrew J. Christ, Paul R. Bierman, Joerg M. Schaefer, Dorthe Dahl-Jensen, Jørgen P. Steffensen, Lee B. Corbett, Dorothy M. Peteet, Elizabeth K. Thomas, Eric J. Steig, Tammy M. Rittenour, Jean-Louis Tison, Pierre-Henri Blard, Nicolas Perdrial, David P. Dethier, Andrea Lini, Alan J. Hidy, Marc W. Caffee & John Southon

Significance: Understanding Greenland Ice Sheet history is critical for predicting its response to future climate warming and contribution to sea-level rise. We analyzed sediment at the bottom of the Camp Century ice core, collected 120 km from the coast in northwestern Greenland. The sediment, frozen under nearly 1.4 km of ice, contains well-preserved fossil plants and biomolecules sourced from at least two ice-free warm periods in the past few million years. Enriched stable isotopes in pore ice indicate precipitation at lower elevations than present, implying ice-sheet absence. The similarity of cosmogenic isotope ratios in the upper-most sediment to those measured in bedrock near the center of Greenland suggests that the ice sheet melted and reformed at least once during the past million years.

Crump 2021

Sarah E. Crump et al., *Ancient plant DNA reveals High Arctic greening during the Last Interglacial.* PNAS **118** (2021), e2019069118.

pnas118-e2019069118-Supplement.pdf

Summer warming is driving a greening trend across the Arctic, with the potential for large-scale amplification of climate change due to vegetation-related feedbacks [Pearson et al., Nat. Clim. Chang. (3), 673–677 (2013)]. Because observational records are sparse and temporally limited, past episodes of Arctic warming can help elucidate the magnitude of vegetation response to temperature change. The Last Interglacial ([LIG], 129,000 to 116,000 y ago) was the most recent episode of Arctic warming on par with predicted 21st century temperature change [Otto-Bliesner et al., Philos. Trans. A Math. Phys. Eng. Sci. (371), 20130097 (2013) and Post et al., Sci. Adv. (5), eaaw9883 (2019)]. However, high-latitude terrestrial records from this period are rare, so LIG vegetation distributions are incompletely known. Pollen-based vegetation reconstructions can be biased by long-distance pollen transport, further obscuring the paleoenvironmental record. Here, we present a LIG vegetation record based on ancient DNA in lake sediment and compare it with fossil pollen. Comprehensive plant community reconstructions through the last and current interglacial (the Holocene) on Baffin Island, Arctic Canada, reveal coherent climatedriven community shifts across both interglacials. Peak LIG warmth featured a ≈400-km northward range shift of dwarf birch, a key woody shrub that is again expanding northward. Greening of the High Arctic—documented here by multiple proxies—likely represented a strong positive feedback on high-latitude LIG warming. Authenticated ancient DNA from this lake sediment also extends the useful preservation window for the technique and Highlights the utility of combining traditional and molecular approaches for gleaning paleoenvironmental insights to better anticipate a warmer future.

Keywords: paleoecology | Arctic greening | sedimentary ancient DNA | Last Interglacial

Sarah E. Crump, Bianca Fréchette, Matthew Power, Sam Cutler, Gregory de Wet, Martha K. Raynolds, Jonathan H. Raberg, Jason P. Briner, Elizabeth K. Thomas, Julio Sepúlveda, Beth Shapiro, Michael Bunce & Gifford H. Miller

Significance: The Arctic is warming exceptionally rapidly, promoting an expansion of shrubs across the Arctic with global-scale climate implications. The Last Interglacial (≈125,000 y ago) was the most recent time the Arctic was warmer than present and thus serves as an analogue for Arctic greening in the near future. Ancient plant DNA in lake sediment from this time reveals major ecosystem changes in response to warmth, including an ≈400 km northward shift of dwarf birch relative to today. Enhanced shrub cover, corroborated by molecular and microfossil analyses, amplified warming during the Last Interglacial and will likely play a similar role in the future. This record constitutes the oldest authenticated plant DNA from lake sediment yet reported, increasing the technique's temporal potential.

Kultur

Heiss 2021

Andreas G. Heiss, Thorsten Jakobitsch, Silvia Wiesinger & Peter Trebsche, *Dig out, Dig in! Plant-based diet at the Late Bronze Age copper production site of Prigglitz-Gasteil (Lower Austria) and the relevance of processed foodstuffs for the supply of Alpine Bronze Age miners.* PLoS ONE **16** (2021), e248287. DOI:10.1371/journal.pone.0248287.

pone16-e0248287-Supplement.xlsx

This paper starts from theoretical and methodical considerations about the role of archaeobotanical finds in culinary archaeology, emphasizing the importance of processed cereal preparations as the "missing link" between crop and consumption. These considerations are exemplified by the discussion of abundant new archaeobotanical data from the Late Bronze Age copper mining site of Prigglitz-Gasteil, situated at the easternmost fringe of the Alps. At this site, copper ore mining in opencast mines took place from the 11th until the 9th century BCE (late Urnfield Culture), as well as copper processing (beneficiation, smelting, refining, casting) on artificial terrain terraces. During archaeological excavations from 2010 to 2014, two areas of the site were investigated and sampled for archaeobotanical finds and microdebris in a high-resolution approach. This paper aims at 1) analysing the food plant spectrum at the mining settlement of Prigglitz-Gasteil basing on charred plant macroremains, 2) investigating producer/consumer aspects of Prigglitz-Gasteil in comparison to the Bronze Age metallurgical sites of Kiechlberg, Klinglberg, and Mauken, and 3) reconstructing the miners' and metallurgists' diets.

Our analyses demonstrate that the plant-based diet of the investigated mining communities reflects the general regional and chronological trends rather than particular preferences of the miners or metallurgists. The lack of chaff, combined with a high occurrence of processed food, suggests that the miners at Prigglitz-Gasteil were supplied from outside with ready-to-cook and processed grain, either from adjacent communities or from a larger distance. This consumer character is in accordance with observation from previously analysed metallurgical sites. Interestingly, the components observed in charred cereal products (barley, Hordeum vulgare, and foxtail millet, Setaria italica) contrast with the dominant crop taxa (broomcorn millet, Panicum miliaceum, foxtail millet, and lentil, Lens culinaris). Foraging of fruits and nuts also significantly contributed to the daily diet.

Smith 2021

Eric Alden Smith & Brian F. Codding, *Ecological variation and institutionalized inequality in hunter-gatherer societies*. PNAS **118** (2021), e2016134118.

pnas118-e2016134118-Supplement0.pdf, pnas118-e2016134118-Supplement1.csv, pnas118-e2016134118-Supplement2.pdf

Research examining institutionalized hierarchy tends to focus on chiefdoms and states, while its emergence among small-scale societies remains poorly understood. Here, we test multiple hypotheses for institutionalized hierarchy, using environmental and social data on 89 hunter-gatherer societies along the Pacific coast of North America. We utilize statistical models capable of identifying the main correlates of sustained political and economic inequality, while controlling for historical and spatial dependence. Our results indicate that the most important predictors relate to spatiotemporal distribution of resources. Specifically, higher reliance on and ownership of clumped aquatic (primarily salmon) versus wild plant resources is associated with greater political-economic inequality, measuring the latter as a composite of internal social ranking, unequal access to food resources, and presence of slavery. Variables indexing population pressure, scalar stress, and intergroup conflict exhibit little or no correlation with variation in inequality. These Results are consistent with models positing that hierarchy will emerge when individuals or coalitions (e.g., kin groups) control access to economically defensible, highly clumped resource patches, and use this control to extract benefits from subordinates, such as productive labor and political allegiance in a patron–client

system. This evolutionary ecological explanation might illuminate how and why institutionalized hierarchy emerges among many small-scale societies.

Keywords: evolutionary ecology | hierarchy | economic defensibility | patron-client systems

Significance: Persistent differences in wealth and power are pervasive in contemporary societies, yet were absent or muted for most of human history. To help explain how and why institutionalized hierarchy can arise in egalitarian systems, we examine a sample of Native American hunting and gathering societies that vary in the degree of inequality. Systematic evaluation of alternative hypotheses identifies the presence of defensible clumped resources that can be monopolized as a likely determinant of institutionalized hierarchy. When such resources are present, societies in our study exhibit substantial inequality, including slavery. Other possible predictors, such as population pressure and warfare, do not show this effect. These results suggest general factors likely facilitate the initial emergence of inequality in human societies.

Ozeanien

Larena 2021

Maximilian Larena et al., *Multiple migrations to the Philippines during the last 50,000 years*. PNAS **118** (2021), e2026132118.

pnas118-e2026132118-Supplement.pdf

Island Southeast Asia has recently produced several surprises regarding human history, but the region's complex demography remains poorly understood. Here, we report ≈2.3 million genotypes from 1,028 individuals representing 115 indigenous Philippine populations and genome-sequence data from two ≈8,000-y-old individuals from Liangdao in the Taiwan Strait. We show that the Philippine islands were populated by at least five waves of human migration: initially by Northern and Southern Negritos (distantly related to Australian and Papuan groups), followed by Manobo, Sama, Papuan, and Cordilleran-related populations. The ancestors of Cordillerans diverged from indigenous peoples of Taiwan at least ≈8,000 y ago, prior to the arrival of paddy field rice agriculture in the Philippines ≈2,500 y ago, where some of their descendants remain to be the least admixed East Asian groups carrying an ancestry shared by all Austronesian-speaking populations. These observations contradict an exclusive "out-of-Taiwan" model of farming–language–people dispersal within the last four millennia for the Philippines and Island Southeast Asia. Sama-related ethnic groups of southwestern Philippines additionally experienced some minimal South Asian gene flow starting ≈1,000 y ago. Lastly, only a few lowlanders, accounting for <1 % of all individuals, presented a low level of West Eurasian admixture, indicating a limited genetic legacy of Spanish colonization in the Philippines. Altogether, our findings reveal a multilayered history of the Philippines, which served as a crucial gateway for the movement of people that ultimately changed the genetic landscape of the Asia-Pacific region.

Keywords: Philippines | human population genetics | Austronesian | Negrito | ISEA

Maximilian Larena, Federico Sanchez-Quinto, Per Sjödin, James McKenna, Carlo Ebeo, Rebecca Reyes, Ophelia Casel, Jin-Yuan Huang, Kim Pullupul Hagada, Dennis Guilay, Jennelyn Reyes, Fatima Pir Allian, Virgilio Mori, Lahaina Sue Azarcon, Alma Manera, Celito Terando, Lucio Jamero Jr, Gauden Sireg, Renefe Manginsay-Tremedal, Maria Shiela Labos, Richard Dian Vilar, Acram Latiph, Rodelio Linsahay Saway, Erwin Marte, Pablito Magbanua, Amor Morales, Ismael Java, Rudy Reveche, Becky Barrios, Erlinda Burton, Jesus Christopher Salon, Ma. Junaliah Tuazon Kels, Adrian Albano, Rose Beatrix Cruz-Angeles,

Edison Molanida, Lena Granehäll, Mário Vicente, Hanna Edlund, Jun-Hun Loo, Jean Trejaut, Simon Y. W. Ho, Lawrence Reid, Helena Malmström, Carina Schlebusch, Kurt Lambeck, Phillip Endicott & Mattias Jakobsson

Significance: A key link to understand human history in Island Southeast Asia is the Philippine archipelago and its poorly investigated genetic diversity. We analyzed the most comprehensive set of population-genomic data for the Philippines: 1,028 individuals covering 115 indigenous communities. We demonstrate that the Philippines were populated by at least five waves of human migration. The Cordillerans migrated into the Philippines prior to the arrival of rice agriculture, where some remain as the least admixed East Asians carrying an ancestry shared by all Austronesian-speaking populations, thereby challenging an exclusive out-of-Taiwan model of joint farming–language– people dispersal. Altogether, our findings portray the Philippines as a crucial gateway, with a multilayered history, that ultimately changed the genetic landscape of the AsiaPacific region.

Politik

Oeberst 2021

Aileen Oeberst, Merle Madita Wachendrfer, Roland Imhoff & Hartmut Blank, *Rich false memories of autobiographical events can be reversed.* PNAS **118** (2021), e2026447118.

False memories of autobiographical events can create enormous problems in forensic settings (e.g., false accusations). While multiple studies succeeded in inducing false memories in interview settings, we present research trying to reverse this effect (and thereby reduce the potential damage) by means of two ecologically valid strategies. We first successfully implanted false memories for two plausible autobiographical events (suggested by the students' parents, alongside two true events). Over three repeated interviews, participants developed false memories (measured by state-of-the-art coding) of the suggested events under minimally suggestive conditions (27 %) and even more so using massive suggestion (56 %). We then used two techniques to reduce false memory endorsement, source sensitization (alerting interviewees to possible external sources of the memories, e.g., family narratives) and false memory sensitization (raising the possibility of false memories being inadvertently created in memory interviews, delivered by a new interviewer). This reversed the false memory build-up over the first three interviews, returning false memory rates in both suggestion conditions to the baseline levels of the first interview (i.e., to ≈15 % and ≈25 %, respectively). By comparison, true event memories were endorsed at a higher level overall and less affected by either the repeated interviews or the sensitization techniques. In a 1-y follow-up (after the original interviews and debriefing), false memory rates further dropped to 5 %, and participants overwhelmingly rejected the false events. One strong practical implication is that false memories can be substantially reduced by easy-to-implement techniques without causing collateral damage to true memories.

Keywords: false memory | suggestion | reversibility | long-term effects

Significance: Human memory is fallible and malleable. In forensic settings in particular, this poses a challenge because people may falsely remember events with legal implications that never actually happened. Despite an urgent need for remedies, however, research on whether and how rich false autobiographical memories can be reversed under realistic conditions (i.e., using reversal strategies that can be applied in real-world settings) is virtually nonexistent. The present study therefore not only replicates and extends previous demonstrations of false memories but, crucially, documents their reversibility after the fact: Employing two ecologically

valid strategies, we show that rich but false autobiographical memories can mostly be undone. Importantly, reversal was specific to false memories (i.e., did not occur for true memories).