

References

Afrika

BAR D 2014

Kathryn A. Bard, Rodolfo Fattovich, Andrea Manzo & Cinzia Perlingieri, *The chronology of Aksum (Tigray, Ethiopia), A view from Bieta Giyorgis*. *Azania* **49** (2014), 285–316.

From 1993 to 2003 archaeological investigations were conducted on Bieta Giyorgis hill to the northwest of Aksum by the joint project of the University of Naples 'L'Orientale' and Boston University. One of the results of this project was to establish a detailed archaeological sequence and chronology for the development of the ancient capital, based on the dating of finds and radiocarbon dates from well defined archaeological contexts. Five phases of development of Aksum have been identified: 1 Proto-Aksumite Phase, 360 BC (?) – 120/40 BC; 2 Aksumite 1 (Early Aksumite) Phase, 120/40 BC – AD 130/190; 3 Aksumite 2 (Classic Aksumite) Phase, AD 130/ 190–360/400; 4 Aksumite 3 (Middle Aksumite) Phase, AD 360/400–550/610; and 5 Aksumite 4 (Late Aksumite) Phase, AD 550/610–800/850. This paper presents the methodology and results of the chronological analysis at Bieta Giyorgis and a comparison with other chronological sequences previously suggested for Aksum.

Keywords: Ethiopia | Aksum | chronology

Aktuell

CHENG 2021

Yafang Cheng, Nan Ma, Christian Witt, Steffen Rapp, Philipp S. Wild, Meinrat O. Andreae, Ulrich Pöschl & Hang Su, *Face masks effectively limit the probability of SARS-CoV-2 transmission*. *science* **372** (2021), 1439–1443. DOI:10.1126/science.abg6296.

s372-1439-Supplement.pdf

Airborne transmission by droplets and aerosols is important for the spread of viruses. Face masks are a well-established preventive measure, but their effectiveness for mitigating severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission is still under debate. We show that variations in mask efficacy can be explained by different regimes of virus abundance and are related to population-average infection probability and reproduction number. For SARS-CoV-2, the viral load of infectious individuals can vary by orders of magnitude. We find that most environments and contacts are under conditions of low virus abundance (virus-limited), where surgical masks are effective at preventing virus spread. More-advanced masks and other protective equipment are required in potentially virus-rich indoor environments, including medical centers and hospitals. Masks are particularly effective in combination with other preventive measures like ventilation and distancing.

HALL 2021

Shannon Hall, *Breastfeeding and Covid Vaccines, What the Data Say*. *nature* **594** (2021), 492–494.

Early studies suggest that vaccines are safe and that antibodies transfer in milk. But do they protect the baby?

KUPFERSCHMIDT 2021

Kai Kupferschmidt & Meredith Wadman, *Delta variant triggers new phase in the pandemic.* *science* **372** (2021), 1375–1376.
[DOI:10.1126/science.372.6549.1375](https://doi.org/10.1126/science.372.6549.1375).

Scientists are probing why a fresh set of viral mutations is taking the world by storm.

REYNOLDS 2021

Catherine J. Reynolds, Daniel M. Altmann & Rosemary Boyton et al., *Prior SARS-CoV-2 infection rescues B and T cell responses to variants after first vaccine dose.* *science* **372** (2021), 1418–1423.
[DOI:10.1126/science.abh1282](https://doi.org/10.1126/science.abh1282).

[s372-1418-Supplement.pdf](#)

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccine rollout has coincided with the spread of variants of concern. We investigated whether single-dose vaccination, with or without prior infection, confers cross-protective immunity to variants. We analyzed T and B cell responses after first-dose vaccination with the Pfizer/BioNTech messenger RNA vaccine BNT162b2 in health care workers (HCW) followed longitudinally, with or without prior Wuhan-Hu-1 SARS-CoV-2 infection. After one dose, individuals with prior infection showed enhanced T cell immunity, antibody-secreting memory B cell response to the spike protein, and neutralizing antibodies effective against variants B.1.1.7 and B.1.351. By comparison, HCW receiving one vaccine dose without prior infection showed reduced immunity against variants. B.1.1.7 and B.1.351 spike mutations resulted in increased, abrogated, or unchanged T cell responses, depending on human leukocyte antigen (HLA) polymorphisms. Single-dose vaccination with BNT162b2 in the context of prior infection with a heterologous variant substantially enhances neutralizing antibody responses against variants.

Catherine J. Reynolds, Corinna Pade, Joseph M. Gibbons, David K. Butler, Ashley D. Otter, Katia Menacho, Marianna Fontana, Angelique Smit, Jane E. Sackville-West, Teresa Cutino-Moguel, Mala K. Maini, Benjamin Chain, Mahdad Noursadeghi, U.K. COVIDsortium Immune Correlates Network, Tim Brooks, Amanda Semper, Charlotte Manisty, Thomas A. Treibel, James C. Moon, U.K. COVIDsortium Investigator, Ana M. Valdes, Áine McKnight, Daniel M. Altmann & Rosemary Boyton

SCHMELZ 2021

Katrin Schmelz & Samuel Bowles, *Overcoming COVID-19 vaccination resistance when alternative policies affect the dynamics of conformism, social norms, and crowding out.* *PNAS* **118** (2021), e2104912118.
[DOI:10.1073/pnas.2104912118](https://doi.org/10.1073/pnas.2104912118).

[pnas118-e2104912118-Supplement.pdf](#)

What is an effective vaccination policy to end the COVID-19 pandemic? We address this question in a model of the dynamics of policy effectiveness drawing upon the results of a large panel survey implemented in Germany during the first and second waves of the pandemic. We observe increased opposition to vaccinations were they to be legally required. In contrast, for voluntary vaccinations, there was higher and undiminished support. We find that public distrust undermines vaccine acceptance, and is associated with a belief that the vaccine is ineffective

and, if enforced, compromises individual freedom. We model how the willingness to be vaccinated may vary over time in response to the fraction of the population already vaccinated and whether vaccination has occurred voluntarily or not. A negative effect of enforcement on vaccine acceptance (of the magnitude observed in our panel or even considerably smaller) could result in a large increase in the numbers that would have to be vaccinated unwillingly in order to reach a herd-immunity target. Costly errors may be avoided if policy makers understand that citizens' preferences are not fixed but will be affected both by the crowding-out effect of enforcement and by conformism. Our findings have broad policy applicability beyond COVID-19 to cases in which voluntary citizen compliance is essential because state capacities are limited and because effectiveness may depend on the ways that the policies themselves alter citizens' beliefs and preferences.

Keywords: endogenous preferences | crowding out intrinsic motivation | trust | policy implementation | state capacities

Significance: We provide a model of policy effectiveness to explore the dynamics of vaccine resistance, drawing on our panel data set. The key ideas motivating the model are that voluntary citizen compliance is essential to policy success even under enforcement and that compliance preferences are endogenous, possibly crowded out by enforcement or enhanced due to conformism as more other citizens comply. Our panel data tracks intraindividual changes in trust in public institutions and vaccine acceptance, allowing inferences about causal effects. Our contribution is the integration of three features: 1) a model of interaction of public policy and citizen preferences, 2) using appropriate data, and 3) allowing insights on how to address the COVID-19 pandemic and other important societal challenges.

SMITH 2021

Thomas P. Smith et al., *Temperature and population density influence SARS-CoV-2 transmission in the absence of non-pharmaceutical interventions*. *PNAS* **118** (2021), e2019284118. DOI:10.1073/pnas.2019284118.

pnas118-e2019284118-Supplement.pdf

As COVID-19 continues to spread across the world, it is increasingly important to understand the factors that influence its transmission. Seasonal variation driven by responses to changing environment has been shown to affect the transmission intensity of several coronaviruses. However, the impact of the environment on severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) remains largely unknown, and thus seasonal variation remains a source of uncertainty in forecasts of SARS-CoV-2 transmission. Here we address this issue by assessing the association of temperature, humidity, ultraviolet radiation, and population density with estimates of transmission rate (R). Using data from the United States, we explore correlates of transmission across US states using comparative regression and integrative epidemiological modeling. We find that policy intervention ("lockdown") and reductions in individuals' mobility are the major predictors of SARS-CoV-2 transmission rates, but, in their absence, lower temperatures and higher population densities are correlated with increased SARS-CoV-2 transmission. Our results show that summer weather cannot be considered a substitute for mitigation policies, but that lower autumn and winter temperatures may lead to an increase in transmission intensity in the absence of policy interventions or behavioral changes. We outline how this information may improve the forecasting of COVID-19, reveal its future seasonal dynamics, and inform intervention policies.

Keywords: SARS-CoV-2 | transmission | climate | seasonality | epidemiology

Thomas P. Smith, Seth Flaxman, Amanda S. Gallinat, Sylvia P. Kinosian, Michael Stemkovski, H. Juliette T. Unwin, Oliver J. Watson, Charles Whittaker, Lorenzo Cattarino, Ilaria Dorigatti, Michael Tristem & William D. Pearse

Significance: There is still much to be understood about the factors influencing the ecology and epidemiology of COVID-19. In particular, whether environmental variation is likely to drive seasonal changes in SARS-CoV-2 transmission dynamics is largely unknown. We investigate the effects of the environment on SARS-CoV-2 transmission rates across the United States and then incorporate the most important environmental parameters into an epidemiological model. We show that temperature and population density can be important factors in transmission but only in the absence of mobility-restricting policy measures, although particularly strong policy measures may be required to mitigate the highest population densities. Our findings improve our understanding of the drivers of COVID-19 transmission and highlight areas in which policy decisions can be proactive.

STAMATATOS 2021

Leonidas Stamatatos, Emilie Seydoux, M. Juliana McElrath & Andrew T. McGuire et al., *mRNA vaccination boosts cross-variant neutralizing antibodies elicited by SARS-CoV-2 infection*. [science](#) **372** (2021), 1413–1418. DOI:10.1126/science.abg9175.

[s372-1413-Supplement.pdf](#)

Emerging severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants have raised concerns about resistance to neutralizing antibodies elicited by previous infection or vaccination. We examined whether sera from recovered and naïve donors, collected before and after immunizations with existing messenger RNA (mRNA) vaccines, could neutralize the Wuhan-Hu-1 and B.1.351 variants. Prevacination sera from recovered donors neutralized Wuhan-Hu-1 and sporadically neutralized B.1.351, but a single immunization boosted neutralizing titers against all variants and SARS-CoV-1 by up to 1000-fold. Neutralization was a result of antibodies targeting the receptor binding domain and was not boosted by a second immunization. Immunization of naïve donors also elicited cross-neutralizing responses but at lower titers. Our study Highlights the importance of vaccinating both uninfected and previously infected persons to elicit cross-variant neutralizing antibodies.

Leonidas Stamatatos, Julie Czartoski, Yu-Hsin Wan, Leah J. Homad, Vanessa Rubin, Hayley Glantz, Moni Neradilek, Emilie Seydoux, Madeleine F. Jennewein, Anna J. MacCamy, Junli Feng, Gregory Mize, Stephen C. De Rosa, Andrés Finzi, Maria P. Lemos, Kristen W. Cohen, Zoe Moodie, M. Juliana McElrath & Andrew T. McGuire

Anthropologie

CURRY 2021

Andrew Curry, *The Ancient Carb Revolution*. [nature](#) **594** (2021), 488–491.

Well before people domesticated crops, they were grinding grains for beer and hearty dishes.

HERSHKOVITZ 2021

Israel Hershkovitz et al., *A Middle Pleistocene Homo from Neshar Ramla, Israel*. [science](#) **372** (2021), 1424–1428.

s372-1424-Supplement.pdf

It has long been believed that Neanderthals originated and flourished on the European continent. However, recent morphological and genetic studies have suggested that they may have received a genetic contribution from a yet unknown non-European group. Here we report on the recent discovery of archaic Homo fossils from the site of Nesher Ramla, Israel, which we dated to 140,000 to 120,000 years ago. Comprehensive qualitative and quantitative analyses of the parietal bones, mandible, and lower second molar revealed that this Homo group presents a distinctive combination of Neanderthal and archaic features. We suggest that these specimens represent the late survivors of a Levantine Middle Pleistocene paleodeme that was most likely involved in the evolution of the Middle Pleistocene Homo in Europe and East Asia.

Israel Hershkovitz, Hila May, Rachel Sarig, Ariel Pokhojaev, Dominique Grimaud-Hervé, Emiliano Bruner, Cinzia Fornai, Rolf Quam, Juan Luis Arsuaga, Viktoria A. Krenn, Maria Martín-Torres, José María Bermúdez de Castro, Laura Martín-Francés, Viviane Slon, Lou Albessard-Ball, Amélie Vialet, Tim Schüler, Giorgio Manzi, Antonio Profico, Fabio Di Vincenzo, Gerhard W. Weber & Yossi Zaidner

LAHR 2021

Marta Mirazón Lahr, *The complex landscape of recent human evolution*. [science](#) **372** (2021), 1395–1396.

Archaic hominins in the Middle East underscore local demographic diversity in the last half million years.

SISTIAGA 2019

Ainara Sistiaga, Fatima Husain, David UribeArrea, David Martín-Perea, Manuel Domínguez-Rodrigo, Troy Ferland, Katherine H. F., *The role of tectonics and hydrothermalism in early human evolution at Olduvai Gorge*. [bioRxiv](#) **2019**, May 9. DOI:10.1101/632414.

bioRxiv2019-05.09-Supplement.pdf

Hominin encephalization has been at the centre of debates concerning human evolution with a consensus on a greater role for improved dietary quality. To sustain the energetic demands of larger brains, cooking was likely essential for increasing the digestibility and energy gain of meat and readily available, yet toxic starches. Here, we present the oldest geochemical evidence for a landscape influenced by tectonic activity and hydrothermal features that potentially shaped early hominin behaviour at Olduvai Gorge. Although use of fire at this time is controversial, hot springs may have provided an alternative way to thermally process dietary resources available in the 1.7 Myo Olduvai wetland. Our data supports the presence of an aquatic-dominated landscape with hydrothermal features that offered hominins new opportunities to hunt and cook readily available tubers and herbivore prey at the emergence of the Acheulean technology. Future studies should further examine whether hydrothermalism similarly influenced other critical aspects of human evolution.

Ainara Sistiaga, Fatima Husain, David UribeArrea, David Martín-Perea, Manuel Domínguez-Rodrigo, Troy Ferland, Katherine H. Freeman, Fernando Díez-Martín, Enrique Baquedano, Audax Mabulla & Roger E. Summons

ZAIDNER 2021

Yossi Zaidner et al., *Middle Pleistocene Homo behavior and culture at 140,000 to 120,000 years ago and interactions with Homo sapiens*. [science](#) **372** (2021), 1429–1433.

s372-1429-Supplement.pdf

Fossils of a Middle Pleistocene (MP) Homo within a well-defined archaeological context at the open-air site of Neshar Ramla, Israel, shed light on MP Homo culture and behavior. Radiometric ages, along with cultural and stratigraphic considerations, suggest that the fossils are 140,000 to 120,000 years old, chronologically overlapping with *H. sapiens* in western Asia. Lithic analysis reveals that MP Homo mastered stone-tool production technologies, previously known only among *H. sapiens* and Neanderthals. The Levallois knapping methods they used are indistinguishable from that of concurrent *H. sapiens* in western Asia. The most parsimonious explanation for such a close similarity is the cultural interactions between these two populations. These findings constitute evidence of contacts and interactions between *H. sapiens* and MP Homo.

Yossi Zaidner, Laura Centi, Marion Prévost, Norbert Mercier, Christophe Falguères, Gilles Guérin, Hélène Valladas, Maïlys Richard, Asmodée Galy, Christophe Pécheyran, Olivier Tombret, Edwige Pons-Branchu, Naomi Porat, Ruth Shahack-Gross, David E. Friesem, Reuven Yeshurun, Zohar Turgeman-Yaffe, Amos Frumkin, Gadi Herzlinger, Ravid Ekshtain, Maayan Shemer, Oz Varoner, Rachel Sarig, Hila May & Israel Hershkovitz

Archäologie

LANE 2016

Paul Lane, *Editorial*. [World Archaeology 48 \(2016\), 605–608](#).

The first four papers all focus on a single theme – the role and significance of ethnoarchaeological research in contemporary archaeology. These were commissioned by the co-authors of the opening paper, Diane Lyons and Joanna Casey, in response to what they regard to be a growing marginalization of this sub-field within the wider discipline. All four papers were subject to the usual process of external peer review under the scrutiny of myself as issue editor. They all make a strong case for the continuing relevance of ethnoarchaeology within the discipline, and all the authors address a number of criticisms of the field that have been made since the mid-1980s and especially since the turn of the millennium. A unifying theme of all four papers is that many of these criticisms are misplaced, and represent a misunderstanding of both the objectives and the ethical foundations of most current ethnoarchaeological research, although all contributors recognize that there are shortcomings and aspects of practice that could be improved upon.

Biographie

FUHRBACH-MÜCHER 2017

Renate Fuhrbach-Mücher, *Pfarrer Hanns Lutze, Ein Wegbegleiter unserer Jugendzeit*. [Evangelische Kirchengemeinde Burscheid 2017, 146, 14–15](#).

Der Sohn von Pfarrer Hanns Lutze, Stephan Lutze, hat die Berufung seines Vaters als Schulpfarrer an das Carl-Duisberg-Gymnasium in Leverkusen 1968 als eine Befreiung für seinen Vater erlebt. Hier konnte er sich für die Jugendlichen einsetzen.

Biologie

AMATO 2021

Katherine R. Amato, Marie-Claire Arrieta, Meghan B. Azad, Michael T. Bailey, Josiane L. Broussard, Carlijn E. Bruggeling,, *The human gut microbiome and health inequities*. [PNAS 118 \(2021\), e2017947118](#).

Individuals who are minoritized as a result of race, sexual identity, gender, or socioeconomic status experience a higher prevalence of many diseases. Understanding the biological processes that cause and maintain these socially driven health inequities is essential for addressing them. The gut microbiome is strongly shaped by host environments and affects host metabolic, immune, and neuroendocrine functions, making it an important pathway by which differences in experiences caused by social, political, and economic forces could contribute to health inequities. Nevertheless, few studies have directly integrated the gut microbiome into investigations of health inequities. Here, we argue that accounting for host–gut microbe interactions will improve understanding and management of health inequities, and that health policy must begin to consider the microbiome as an important pathway linking environments to population health.

Keywords: structural racism | health disparities | chronic disease | DOHad | policy

Katherine R. Amato, Marie-Claire Arrieta, Meghan B. Azad, Michael T. Bailey, Josiane L. Broussard, Carlijn E. Bruggeling, Erika C. Claud, Elizabeth K. Costello, Emily R. Davenport, Bas E. Dutilh, Holly A. Swain Ewald, Paul Ewald, Erin C. Hanlon, Wrenetha Julion, Ali Keshavarzian, Corinne F. Maurice, Gregory E. Miller, Geoffrey A. Preidis, Laure Segurel, Burton Singer, Sathish Subramanian, Liping Zhaoa & Christopher W. Kuzawa

Datierung

BOARETTO 2021

Elisabetta Boaretto et al., *The absolute chronology of Boker Tachtit (Israel) and implications for the Middle to Upper Paleolithic transition in the Levant*. [PNAS 118 \(2021\), e2014657118](#).

[pnas118-e2014657118-Supplement.pdf](#)

The Initial Upper Paleolithic (IUP) is a crucial lithic assemblage type in the archaeology of southwest Asia because it marks a dramatic shift in hominin populations accompanied by technological changes in material culture. This phase is conventionally divided into two chronocultural phases based on the Boker Tachtit site, central Negev, Israel. While lithic technologies at Boker Tachtit are well defined, showing continuity from one phase to another, the absolute chronology is poorly resolved because the radiocarbon method used had a large uncertainty. Nevertheless, Boker Tachtit is considered to be the origin of the succeeding Early Upper Paleolithic Ahmarian tradition that dates in the Negev to $\approx 42,000$ y ago (42 ka). Here, we provide ^{14}C and optically stimulated luminescence dates obtained from a recent excavation of Boker Tachtit. The new dates show that the early phase at Boker Tachtit, the Emirian, dates to 50 through 49 ka, while the late phase dates to 47.3 ka and ends by 44.3 ka. These Results show that the IUP started in the Levant during the final stages of the Late Middle Paleolithic some 50,000 y ago. The later IUP phase in the Negev chronologically overlaps with the Early Upper Paleolithic Ahmarian of the Mediterranean woodland region between 47 and 44 ka. We conclude that Boker Tachtit is the earliest manifestation of the IUP in Eurasia. The study shows that distinguishing the chronology of the IUP

from the Late Middle Paleolithic, as well as from the Early Upper Paleolithic, is much more complex than previously thought.

Keywords: MP to UP transition | Initial Upper Paleolithic | Emirian | Boker Tachtit | Southern Levant

Elisabetta Boaretto, Marion Hernandez, Mae Goder-Goldberger, Vera Aldeias, Lior Regev, Valentina Caracuta, Shannon P. McPherron, Jean-Jacques Hublin, Steve Weiner & Omry Barzilai

Significance: The Initial Upper Paleolithic (IUP) marks a distinct cultural change possibly related to *Homo sapiens* dispersals into Eurasia. New radiocarbon and optically stimulated luminescence dates from the recent excavations at Boker Tachtit, Negev, Israel, show that the IUP starts as early as around 50,000 y ago, and the later IUP phase dates to 48,000 y ago. Thus, the Late Middle Paleolithic (MP) and early IUP populations both inhabited the Negev 50,000 y ago. The Negev later IUP phase and the Early UP of the Eastern Mediterranean woodland are contemporaneous. These Results also show that the MP to UP transition was a fastevolving process.

Klima

NOORI 2021

Roohollah Noori et al., *Anthropogenic depletion of Iran's aquifers*. [PNAS 118 \(2021\), e2024221118](#).

[pnas118-e2024221118-Supplement.pdf](#)

Global groundwater assessments rank Iran among countries with the highest groundwater depletion rate using coarse spatial scales that hinder detection of regional imbalances between renewable groundwater supply and human withdrawals. Herein, we use in situ data from 12,230 piezometers, 14,856 observation wells, and groundwater extraction points to provide ground-based evidence about Iran's widespread groundwater depletion and salinity problems. While the number of groundwater extraction points increased by 84.9% from 546,000 in 2002 to over a million in 2015, the annual groundwater withdrawal decreased by 18% (from 74.6 to 61.3 km³/y) primarily due to physical limits to fresh groundwater resources (i.e., depletion and/or salinization). On average, withdrawing 5.4 km³/y of nonrenewable water caused groundwater tables to decline 10 to 100 cm/y in different regions, averaging 49 cm/y across the country. This caused elevated annual average electrical conductivity (EC) of groundwater in vast arid/semiarid areas of central and eastern Iran (16 out of 30 subbasins), indicating "very high salinity hazard" for irrigation water. The annual average EC values were generally lower in the wetter northern and western regions, where groundwater EC improvements were detected in rare cases. Our results based on high-resolution groundwater measurements reveal alarming water security threats associated with declining fresh groundwater quantity and quality due to many years of unsustainable use. Our analysis offers insights into the environmental implications and limitations of water-intensive development plans that other water-scarce countries might adopt.

Keywords: groundwater depletion | salinity | water resources management | water quality

Roohollah Noori, Mohsen Maghrebi, Ali Mirchi, Qihong Tang, Rabin Bhattarai, Mojtaba Sadegh, Mojtaba Noury, Ali Torabi Haghighi, Bjrn Klve & Kaveh Madani

Significance: Iran is facing a state of water bankruptcy that threatens its socioeconomic development and natural environments. Using an exceptionally rich measured groundwater dataset, we illustrate the extent and severity of Iran's groundwater depletion and salinization problems during the 2002 to 2015 period,

when the number of groundwater extraction points nearly doubled. Iran's nonrenewable groundwater withdrawal was about 66 million m³ in 1965, which cumulatively grew to approximately 133×10^3 million m³ in 2019. This increase is about 3.4 times the capacity of the famous Three Gorges Dam in China. Groundwater decline due to extensive overexploitation of nonrenewable groundwater and rising salinity levels are documented in almost all subbasins, pointing to dire, worsening water security risks across the country.

SHAO 2021

Yaping Shao, Isabell Schmidt, Gerd-Christian Weniger & Andreas Hense et al., *Human-existence probability of the Aurignacian techno-complex under extreme climate conditions*. [Quaternary Science Reviews](#) **263** (2021), 106995, 1–20.

The Aurignacian occurred in the middle of the Last Glacial Period, in which climate underwent major changes on millennial time scales, highlighted by the Greenland interstadial and stadial periods. Here we investigate how climate change influenced the Aurignacian human dispersal in Europe and search for answers to several highly-debated questions in the Archaeology and Paleoanthropology. We use a global climate model to simulate the prototypical stadial and interstadial climate conditions and develop a human-existence potential (HEP) model to compute the probability of human existence by combining the climate data with archaeological site data. Using the HEP model, we reconstruct the patterns of human-existence probability and provide a pan-European overview of the Aurignacian human dispersal. The model results suggest that climate change significantly influences human dispersal, but there is evidence of human adaptation to climate. The Aurignacian dispersal is likely achieved in alternating modes of expansion and contraction. In comparison to interstadial times, human-existence probability in stadial times is largely reduced, but hot-spots exist in the climate shadows of large topographic features.

Keywords: Heinrich events | Human-existence potential | Human-existence probability | Aurignacian techno-complex | Human adaptation to climate | Human dispersal

Yaping Shao, Heiko Limberg, Konstantin Klein, Christian Wegener, Isabell Schmidt, Gerd-Christian Weniger, Andreas Hense & Masoud Rostami

Methoden

EICHLER 2021

Jennifer Eichler, Christina Lembrecht & Karin Werner, *Leistungen und Kostenrahmen für zeitgemäße Open-Access-Publikationen in den Geistes- und Sozialwissenschaften, Vorschlag für eine Differenzierung von Open-Access-Gebühren verlagstypischen Leistungen entsprechend*. www.ssoar.info **2021**, Mar. 9. DOI:10.21241/ssoar.72649.

Es obliegt allen Mitgliedern der Community, zu entscheiden, welche Publikationskultur sie zukünftig entwickeln möchte. Die Quantität und Qualität der Daten ist für die Erzielung einer hohen Reichweite, für Crosslinking und andere metrische und analytische Operationen (z.B. in den Digital Humanities) wesentlich. Wir fangen vielleicht an mit E-Book-PDF-Dateien, die wir in einem Repositorium ablegen. Aber es sollte uns klar sein, dass dies nicht das Ende der Entwicklung einer offenen digitalen Publikationskultur in den SSH ist, sondern erst der Anfang.

SCHMIDT 2017

Burghart Schmidt & Wolfgang Gruhle, *Klimaspuren der Bäume, Strahlungsschwankungen der Sonne als Impulsgeber*. (Mainz 2017).

Zahlreiche mathematische Verfahren werden wortreich und mit viel Handwaving beschrieben ohne konkret nachvollziehbar zu werden. Bei den wenigen und unvollständigen Formeln fehlt die Definition der Variablen und Parameter. Keiner kann auf dieser Basis die hier beschriebenen Verfahren nachvollziehen. [FAB bei Amazon]

Neolithikum

DALY 2021

Kevin G. Daly, Lisa Yeomans, Pernille Bangsgaard, Marjan Mashkour, Melinda A. Zeder & Daniel G. Bradley et al., *Herded and hunted goat genomes from the dawn of domestication in the Zagros Mountains*.

[PNAS 118 \(2021\), e2100901118](#).

[pnas118-e2100901118-Supplement.pdf](#)

The Aceramic Neolithic (≈ 9600 to 7000 cal BC) period in the Zagros Mountains, western Iran, provides some of the earliest archaeological evidence of goat (*Capra hircus*) management and husbandry by circa 8200 cal BC, with detectable morphological change appearing $\approx 1,000$ y later. To examine the genomic imprint of initial management and its implications for the goat domestication process, we analyzed 14 novel nuclear genomes (mean coverage 1.13X) and 32 mitochondrial (mtDNA) genomes (mean coverage 143X) from two such sites, Ganj Dareh and Tepe Abdul Hosein. These genomes show two distinct clusters: those with domestic affinity and a minority group with stronger wild affinity, indicating that managed goats were genetically distinct from wild goats at this early horizon. This genetic duality, the presence of long runs of homozygosity, shared ancestry with later Neolithic populations, a sex bias in archaeozoological remains, and demographic profiles from across all layers of Ganj Dareh support management of genetically domestic goat by circa 8200 cal BC, and represent the oldest to-this-date reported livestock genomes. In these sites a combination of high autosomal and mtDNA diversity, contrasting limited Y chromosomal lineage diversity, an absence of reported selection signatures for pigmentation, and the wild morphology of bone remains illustrates domestication as an extended process lacking a strong initial bottleneck, beginning with spatial control, demographic manipulation via biased male culling, captive breeding, and subsequently phenotypic and genomic selection.

Keywords: caprine | ancient DNA | Neolithic | domestication | archaeozoology

Kevin G. Daly, Valeria Mattiangeli, Andrew J. Hare, Hossein Davoudi, Homa Fathi, Sanaz Beizae Doost, Sariah Amiri, Roya Khazaeli, Delphine Decruyenaere, Jebrael Nokandeh, Tobias Richter, Hojjat Darabi, Peder Mortensen, Alexis Pantos, Lisa Yeomans, Pernille Bangsgaard, Marjan Mashkour, Melinda A. Zeder & Daniel G. Bradley

Significance: Goats were among the first domestic animals and today are an important livestock species; archaeozoological evidence from the Zagros Mountains of western Iran indicates that goats were managed by the late ninth/early eighth millennium. We assess goat assemblages from Ganj Dareh and Tepe Abdul Hosein, two Aceramic Neolithic Zagros sites, using complementary archaeozoological and archaeogenomic approaches. Nuclear and mitochondrial genomes indicate that these goats were genetically diverse and ancestral to later domestic goats and already distinct from wild goats. Demographic profiles from bone remains, differential diversity patterns of uniparental markers, and presence of long runs of

homozygosity reveal the practicing and consequences of management, thus expanding our understanding of the beginnings of animal husbandry.

Politik

MOD 2021

Ministry of Defence, *Human Augmentation, The Dawn of a New Paradigm*. (Bristol 2021).

Based upon what we know today, and if current predictions are correct, genetic modification has, by far, the greatest potential for human enhancement. According to the United States Defense Advanced Research Projects Agency (DARPA), genetic modification could be used to create super soldiers who 'kill without mercy, do not get tired, do not show fear and behave more like a machine than a human'.

Religion

MANNING 2020

Helmut Otto Manning, *Von Jesus kein Lebenszeichen! Zur Realgeschichte von Christentum und Islam von den Anfängen bis zur Gegenwart*. (Eisenach 2020).

Das Werk ist ohne Zweifel flott und unterhaltsam geschrieben. Es enthält wider alle Gepflogenheiten im Sachbuchbereich bis auf den Namen keinerlei Hinweis zum Autor. Grob geschätzt vier Fünftel aller Einzelbehauptungen sind auf den ersten Blick falsch oder unsinnig. Natürlich weist dieser Satz auch mich als Teil der vom Autor aufgedeckten klerikalen Verschwörung aus. [FAB bei Amazon]