

References

Aktuell

ARMITAGE 2022

Richard Armitage, *War in Ukraine and the inverse care law*. [Lancet Regional Health Europe 17 \(2022\), 100401, 1–2.](#)

As such, it is generally those Ukrainians who remain in their home country, especially those located closest to Russian hostilities, who bear the greatest burden of disease and associated health needs, rather than those who have escaped the country and are now refugees. Paradoxically, it is this same group to which high quality health care is least accessible, thereby creating a variant of the inverse care law in the theatre of active conflict.

EDITORIAL 2022

War and infectious diseases: brothers in arms, Editorial. [Lancet Infectious Diseases 22 \(2022\), 563.](#)

ROYAL SOCIETY 2023

Royal Society, *COVID-19, Examining the effectiveness of non-pharmaceutical interventions*. [The Royal Society 2023, viii](#). ISBN:978-1-78252-671-1.

Although most of the numerous studies included in this review found that masks reduce transmission, almost all were at critical risk of bias in at least one of the domains embodied in ROB tools. In addition, the size of measured effects was variable and typically of low precision.

Taken together, the breadth, strength and consistency of evidence relating to nine types of social distancing measures indicate that many stringent social distancing measures and combinations of such interventions substantially reduced SARS-CoV-2 transmission. The evidence does not indicate what would be the ‘right’ measure (or measures) for a future pathogen, but it does indicate that stringent social distancing measures can be effective at limiting transmission.

XIAO 2023

Hong Xiao, Zhicheng Wang, Fang Liu & Joseph M. Unger, *Excess All-Cause Mortality in China After Ending the Zero COVID Policy*. [JAMA Network Open 6 \(2023\), e2330877. DOI:10.1001/jamanetworkopen.2023.30877.](#)

During the first 3 years of the pandemic, China experienced low COVID-19–related excess mortality due to the implementation of stringent mitigation measures.¹ However, after China ended its dynamic zero COVID policy in December 2022, COVID-19 incidence and hospitalizations surged.² It has been reported by the Chinese government that approximately 60 000 COVID-19–related deaths occurred in health facilities in China from early December 2022 to January 12, 2023.² Prior forecasts had anticipated a notably higher number of excess deaths if the zero COVID policy were to be abandoned during the Omicron surge, ranging from 0.97 million to 2.10 million.³⁻⁷ However, those model-based forecasts of excess deaths lacked an empirical basis.

Question Was the sudden end of China’s zero COVID policy associated with an increase in population all-cause mortality?

Results An estimated 1.87 million (95 %CI, 0.71 million-4.43 million; 1.33 per 1000 population) excess deaths occurred among individuals 30 years and older in China during the first 2 months after the end of the zero COVID policy. Excess deaths predominantly occurred among older individuals and were observed across all provinces in mainland China except Tibet.

Conclusions and Relevance In this cohort study of the population in China, the sudden lifting of the zero COVID policy was associated with significant increases in all-cause mortality. These findings provide valuable insights for policy makers and public health experts and are important for understanding how the sudden propagation of COVID-19 across a population may be associated with population mortality.

Anthropologie

ASHTON 2023

Nick Ashton & Chris Stringer, *Did our ancestors nearly die out?* [science](#) **381** (2023), 947–948.

Genetic analyses suggest an ancient human population crash 900,000 years ago.

HU 2023

Wangjie Hu, Ziqian Hao, Pengyuan Du, Fabio Di Vincenzo, Giorgio Manzi, Jialong Cui, Yun-Xin Fu, Yi-Hsuan Pan & Haipeng Li, *Genomic inference of a severe human bottleneck during the Early to Middle Pleistocene transition.* [science](#) **381** (2023), 979–984.

[s381-0979-Supplement.pdf](#)

Population size history is essential for studying human evolution. However, ancient population size history during the Pleistocene is notoriously difficult to unravel. In this study, we developed a fast infinitesimal time coalescent process (FitCoal) to circumvent this difficulty and calculated the composite likelihood for presentday human genomic sequences of 3154 individuals. Results showed that human ancestors went through a severe population bottleneck with about 1280 breeding individuals between around 930,000 and 813,000 years ago. The bottleneck lasted for about 117,000 years and brought human ancestors close to extinction. This bottleneck is congruent with a substantial chronological gap in the available African and Eurasian fossil record. Our results provide new insights into our ancestry and suggest a coincident speciation event.

Bibel

MACDONALD 2017

Nathan MacDonald, *The Date of the Shema (Deuteronomy 6:4–5).* [Journal of Biblical Literature](#) **136** (2017), 765–782.

In 1992, Timo Veijola argued that the love commandment in Deut 6:5 was an interpolation into the Shema. On the basis of its vocabulary, he showed it to be consistent with a late Deuteronomistic stratum in Deuteronomy, which he labeled the Bundestheologische Redaktion (DtrB). In this essay I argue that Veijola’s argument about the integrity of Deut 6:4–5 was based on a misunderstanding of Joüon’s Hebrew grammar. Veijola’s central insight, however, about the date of

Deut 6:5 was sound and can be correlated with further evidence from the vocabulary and reception history of Deut 6:4. Thus, the widely held assumption that Deut 6:4 stood at the head of a Josianic book of Deuteronomy and was the slogan of the Josianic reformation is shown to rest upon precarious foundations.

Biologie

LJUNGQUIST 2023

Oskar Ljungquist et al., *Highly multidrug-resistant Gram-negative bacterial infections in war victims in Ukraine, 2022*. [Lancet Infectious Diseases](#) **23** (2023), 784–786.

[LancetInfectDis23-0784-Supplement.pdf](#)

Although most strains (including 90% of those resistant to meropenem) were sensitive to colistin, nine (6%) of 156 isolates were resistant to all antibiotics tested, including newer β -lactam β -lactamase inhibitor combinations.

Oskar Ljungquist, Oleksandr Nazarchuk, Gunnar Kahlmeter, Vigith Andrews, Thalea Koithan, Lisa Wasserstrom, Dmytro Dmytriiev, Nadiia Fomina, Vira Bebyk, Erika Matuschek, Kristian Riesbeck

PALLETT 2023

Scott J. C. Pallett, Alex Trompeter, Marina Basarab, Luke S. P. Moore & Sara E. Boyd, *Multidrug-resistant infections in war victims in Ukraine*. [Lancet Infectious Diseases](#) **23** (2023), e270–e271.

Gram-negative, multidrug-resistant organisms—including those resistant to colistin, cefiderocol, and new β -lactam– β -lactamase inhibitor combinations—present considerable difficulties in the treatment of combat injury-related infections in patients in Ukraine and those repatriated elsewhere.

PETROSILLO 2023

Nicola Petrosillo, Eskild Petersen & Sergii Antoniak, *Ukraine war and antimicrobial resistance*. [Lancet Infectious Diseases](#) **23** (2023), 653–654.

From March to June, 2022, Shultze and colleagues⁹ screened for multidrug-resistant Gram-negative bacteria in 103 Ukrainian patients at admission to the University Hospital Frankfurt, Germany. They found 34 multidrug-resistant Gram-negative isolates in 17 (17%) of 103 patients. The authors concluded that hospitals should consider infection control strategies to prevent the spread of hypervirulent carbapenem-resistant bacteria isolated when admitting patients from Ukraine, especially if they have war-related injuries.

SPITZER 2023

Manfred Spitzer, *Babys und Bildschirme, Realer oder virtueller Autismus?* [Nervenheilkunde](#) **42** (2023), 332–341.

Autismus ist eine durch genetische und umweltbedingte Faktoren verursachte Störung der Gehirnentwicklung im frühen Kindesalter. Es gibt verschiedene Schweregrade, von leichten sozialen Defiziten (manchmal in Kombination mit besonderen Fähigkeiten wie Kopfrechnen oder eidetischem Vorstellungsvermögen) bis hin zur schweren geistigen Behinderung und lebenslanger deutlicher Beeinträchtigung. In den letzten 50 Jahren ist die Prävalenz von Autismus von einem Fall auf 5000 auf einen Fall von 44 Kindern exponentiell gestiegen. Für dieses Phänomen wurden mehrere Ursachen vorgeschlagen – von einer Ausweitung des Krankheitskonzepts und einer Zunahme des Wissens über und Bewusstseins für

die Krankheit bis hin zu einer tatsächlichen Zunahme der Störung, die durch die Elternschaft in einem späteren Alter verursacht wird. Experten sind sich jedoch einig darüber, dass etwa die Hälfte dieses dramatischen Anstiegs – um mehr als das 100-Fache – ungeklärt ist. Ausgehend von den jüngsten Beobachtungen eines Zusammenhangs zwischen der frühen Nutzung von Bildschirmmedien und der Entwicklung autistischer Symptome wird hier argumentiert, dass ein zentrales Merkmal der heutigen Umwelt von Kleinkindern, die digitalen Bildschirmmedien, den gemeldeten Anstieg der Prävalenz mit erklären könnte.

Judentum

RATZON 2017

Eshbal Ratzon & Jonathan Ben-Dov, *A Newly Reconstructed Calendrical Scroll from Qumran in Cryptic Script*. [Journal of Biblical Literature](#) **136** (2017), 905–936.

In this article we offer a reconstruction and edition of one of the last unpublished Dead Sea Scrolls. It is an extremely fragmentary calendrical scroll written in the Cryptic A code. While images of 4Q324d were included in the DJD series, no formal edition of it exists. The suggested jigsaw-puzzle-like reconstruction integrates forty-two extremely small fragments into a stretch of five consecutive columns of what we consider to be one continuous scroll (pace earlier preliminary editions). In terms of its content, the calendar contained in this scroll resembles the one found at the top of 4Q394 3–7 (a copy of 4QMMT) and in 4Q394 1–2. An intriguing interlinear gloss in both shape and content offers a ruling on the Festival of Wood Offering that follows the halakic rulings of the Temple Scroll.

Jungpaläolithikum

BAUMANN 2023

Chris Baumann, Shumon T. Hussain, Martina Roblíèková, Felix Riede, Marcello A. Mannino & Hervé Bocherens, *Evidence for hunter-gatherer impacts on raven diet and ecology in the Gravettian of Southern Moravia*. [Nature Ecology & Evolution](#) **7** (2023), 1302–1314.

The earlier Gravettian of Southern Moravia—the Pavlovian—is notable for the many raven bones (*Corvus corax*) documented in its faunal assemblages. On the basis of the rich zooarchaeological and settlement data from the Pavlovian, previous work suggested that common ravens were attracted by human domestic activities and subsequently captured by Pavlovian people, presumably for feathers and perhaps food. Here, we report independent $\delta^{15}\text{N}$, $\delta^{13}\text{C}$ and $\delta^{34}\text{S}$ stable isotope data obtained from 12 adult ravens from the Pavlovian key sites of Pøedmostí I, Pavlov I and Dolní Věstonice I to test this idea. We show that Pavlovian ravens regularly fed on larger herbivores and especially mammoths, aligning in feeding preferences with contemporaneous Gravettian foragers. We argue that opportunistic generalist ravens were encouraged by human settlement and carcass provisioning. Our data may thus provide surprisingly early evidence for incipient synanthropism among Palaeolithic ravens. We suggest that anthropogenic manipulation of carrion supply dynamics furnished unique contexts for the emergence of human-oriented animal behaviours, in turn promoting novel human foraging opportunities—dynamics which are therefore important for understanding early hunter-gatherer ecosystem impacts.

The anthropogenic fingerprint of Gravettian landscapes in the Pavlovian Hill region may indeed have hitherto been underestimated. There is, for example, evidence for some early forms of resource curation, notably of firewood¹¹⁰. Furthermore, as recently suggested by new high-resolution investigations of a bone deposit below the settlement of Dolni Vistonice II⁴⁴, the mostly mammoth-dominated bone beds in natural gullies or depressions—a recurrent feature of the region’s mid-Upper Palaeolithic record—may have served as places of meat and/or bone storage, conservation and refuse in or adjacent to wetlands or shallow water bodies. In addition, carnivore gnawing marks are suspiciously rare in Pavlovian faunal assemblages (and bone beds), with frequencies below 1% (ref. 98) (Supplementary Table 2). This suggests that human foragers exerted considerable control over site and cache access⁹⁷. The respective mid-Upper Palaeolithic landscapes thus seem to bear an underrated anthropogenic footprint and invoke more recent Arctic foraging landscapes, in which large marine mammals were seasonally hunted, dismembered and transported, and where the ground close to human kill and processing sites is still littered with animal bones and other residues today, with some body parts deliberately planted in nearby ponds or waterholes¹¹¹. All of this suggests that human behaviour in the Pavlovian may have created distinct micro-environments with an increased stock of high-caloric carrion drawn together at particular localities close to human habitation and aggregation sites, in turn supplying unique scavenging opportunities for other animals.

Klima

BACON 2023

Sheldon Bacon, *Arctic sea ice, ocean, and climate evolution*. [science](#) **381** (2023), 946–947.

MARRIS 2023

Emma Marris, *Hawaii wildfires, Did researchers expect Maui to burn?* [nature](#) **620** (2023), 708–709.

Wildfires are not new to Hawaii but they are becoming increasingly devastating. More traditional land use and better data dissemination could help to prevent future tragedies.

Grasses serve as fuel for many Hawaiian fires. [The 2021 Maui County report] called for an “aggressive plan to replace these hazardous fuel sources with native plants to reduce combustible fuel while increasing water retention”. The flammable grasses in question — including kikuyu grass (*Cenchrus clandestinus*), fountain grass (*Cenchrus setaceus*), molasses grass (*Melinis minutiflora*) and guinea grass (*Megathyrsus maximus*) — were introduced around the turn of the twentieth century as forage or ornamental plants. But native Hawaiian dryland plants are not necessarily more fire resistant, says Katie Kamelamela, an ethnobotanist at Arizona State University in Tempe. What matters is how much dry fuel is on land and how it is arranged. Grazing can reduce fuel loads.

POLYAKOV 2023

Igor V. Polyakov et al., *Fluctuating Atlantic inflows modulate Arctic atlantification*. [science](#) **381** (2023), 972–979.

s381-0972-Supplement.pdf

Enhanced warm, salty subarctic inflows drive high-latitude atlantification, which weakens oceanic stratification, amplifies heat fluxes, and reduces sea ice. In this

work, we show that the atmospheric Arctic Dipole (AD) associated with anticyclonic winds over North America and cyclonic winds over Eurasia modulates inflows from the North Atlantic across the Nordic Seas. The alternating AD phases create a “switchgear mechanism.” From 2007 to 2021, this switchgear mechanism weakened northward inflows and enhanced sea-ice export across Fram Strait and increased inflows throughout the Barents Sea. By favoring stronger Arctic Ocean circulation, transferring freshwater into the Amerasian Basin, boosting stratification, and lowering oceanic heat fluxes there after 2007, AD+ contributed to slowing sea-ice loss. A transition to an AD- phase may accelerate the Arctic sea-ice decline, which would further change the Arctic climate system.

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Kultur

BACON 2023

Bennett Bacon, Azadeh Khatiri, James Palmer, Tony Freeth, Paul Pettitt & Robert Kentridge, *An Upper Palaeolithic Proto-writing System and Phenological Calendar*. [Cambridge Archaeological Journal](#) **33** (2023), 371–389.

In at least 400 European caves such as Lascaux, Chauvet and Altamira, Upper Palaeolithic *Homo sapiens* groups drew, painted and engraved non-figurative signs from at least $\approx 42,000$ BP and figurative images (notably animals) from at least 37,000 BP. Since their discovery ≈ 150 years ago, the purpose or meaning of European Upper Palaeolithic non-figurative signs has eluded researchers. Despite this, specialists assume that they were notational in some way. Using a database of images spanning the European Upper Palaeolithic, we suggest how three of the most frequently occurring signs—the line $\langle | \rangle$, the dot $\langle \dot{\circ} \rangle$, and the $\langle Y \rangle$ —functioned as units of communication. We demonstrate that when found in close association with images of animals the line $\langle | \rangle$ and dot $\langle \dot{\circ} \rangle$ constitute numbers denoting months, and form constituent parts of a local phenological/meteorological calendar beginning in spring and recording time from this point in lunar months. We also demonstrate that the $\langle Y \rangle$ sign, one of the most frequently occurring signs in Palaeolithic non-figurative art, has the meaning $\langle \text{To Give Birth} \rangle$. The position of the $\langle Y \rangle$ within a sequence of marks denotes month of parturition, an ordinal representation of number in contrast to the cardinal representation used in tallies. Our data indicate that the purpose of this system of associating animals with calendar information was to record and convey seasonal behavioural information about specific prey taxa in the geographical regions of concern. We suggest a specific way in which the pairing of numbers with animal subjects constituted a complete unit of meaning—a notational system combined with its subject—that provides us with a specific insight into what one set of notational marks means. It gives us our first specific reading of European Upper Palaeolithic communication, the first known writing in the history of *Homo sapiens*.

GALA 2023

Nicholas Gala, Stephen J. Lycett, Michelle R. Bebber & Metin I. Eren, *The Injury Costs of Knapping*. [American Antiquity](#) **88** (2023), 283–301.

For at least three million years, knapping stone has been practiced by hominin societies large and small, past and present. Thus, understanding knapping, knappers, and knapping cultures is fundamental to anthropological research around the world. Although there is a general sense that stone knapping is inherently

dangerous and can lead to injury, little is formally, specifically, or systematically known about the frequency, location, or severity of knapping injuries. Toward this end, we conducted a 31-question survey of modern knappers to better understand knapping risks. Responses from 173 survey participants suggest that knapping injuries are a real and persistent hazard, even though a majority of modern knappers use personal protective equipment. A variety of injuries (lacerations, punctures, aches, etc.) can occur on nearly any part of the body. The severity of injury sustained by some of our participants is shocking, and nearly one-quarter of respondents reported having sought or received professional medical attention for a flintknapping-related injury. Overall, the results of this survey suggest that there would have likely been serious, even fatal, costs to knappers in past societies. Such costs may have encouraged the deployment of any social learning capacities possessed by hominins or delayed the learning or exposure of young infants or children to knapping.

Keywords: stone tools | flintknapping | injuries | cultural transmission | medical anthropology | social learning

Methoden

BRAINARD 2023

Jeffrey Brainard, *Costly questionnaire challenged*. [science](#) **381** (2023), 929.

The Journal of Clinical Hypertension has retracted a 2008 article that provided the empirical foundation for a questionnaire whose co-creator billed some researchers several thousand dollars each to use. Public health specialist Donald Morisky of the University of California, Los Angeles, cited his copyright of the instrument, which helps predict how likely patients are to adhere to a drug regimen. Rather than pay, several scientists chose to retract publications that used the questionnaire. The retraction of Morisky's paper, announced in August and reported last week by Retraction Watch, comes nearly 4 years after a scientist not involved in the research told the journal the math in the paper was implausible. In its retraction notice, the journal said it conducted an independent statistical review and concluded that the article's results were misleading.

Neolithikum

AHMED 2023

Hanin Ibrahim Ahmed, Matthias Heuberger, Thomas Wicker & Simon G. Krattinger et al., *Einkorn genomics sheds light on history of the oldest domesticated wheat*. [nature](#) **620** (2023), 830–838.

n620-0830-Supplement.pdf

Einkorn (*Triticum monococcum*) was the first domesticated wheat species, and was central to the birth of agriculture and the Neolithic Revolution in the Fertile Crescent around 10,000 years ago^{1,2}. Here we generate and analyse 5.2-Gb genome assemblies for wild and domesticated einkorn, including completely assembled centromeres. Einkorn centromeres are highly dynamic, showing evidence of ancient and recent centromere shifts caused by structural rearrangements. Whole-genome sequencing analysis of a diversity panel uncovered the population structure and evolutionary history of einkorn, revealing complex patterns of hybridizations and introgressions after the dispersal of domesticated einkorn from the Fertile Crescent. We also show that around 1% of the modern bread wheat (*Triticum aestivum*)

A subgenome originates from einkorn. These resources and findings highlight the history of einkorn evolution and provide a basis to accelerate the genomics-assisted improvement of einkorn and bread wheat.

Hanin Ibrahim Ahmed, Matthias Heuberger, Adam Schoen, Dal-Hoe Koo, Jesus Quiroz-Chavez, Laxman Adhikari, John Raupp, Stéphane Cauet, Nathalie Rodde, Charlotte Cravero, Caroline Callot, Gerard R. Lazo, Nagarajan Kathiresan, Parva K. Sharma, Ian Moot, Inderjit Singh Yadav, Lovepreet Singh, Gautam Sripalli, Nidhi Rawat, Raju Datla, Naveenkumar Athiyannan, Ricardo H. Ramirez-Gonzalez, Cristobal Uauy, Thomas Wicker, Vijay K. Tiwari, Michael Abrouk, Jesse Poland & Simon G. Krattinger

Politik

BAILEY 2023

Martha J. Bailey, Janet Currie & Hannes Schwandt, *The COVID-19 baby bump in the United States*. [PNAS 120 \(2023\), e2222075120](#).

[pnas120-e2222075120-Supplement.pdf](#)

We use natality microdata covering the universe of US births for 2015 to 2021 and California births from 2015 through February 2023 to examine childbearing responses to the COVID-19 pandemic. We find that 60% of the 2020 decline in US fertility rates was driven by sharp reductions in births to foreign-born mothers although births to this group comprised only 22% of all US births in 2019. This decline started in January 2020. In contrast, the COVID-19 recession resulted in an overall “baby bump” among US-born mothers, which marked the first reversal in declining fertility rates since the Great Recession. Births to US-born mothers fell by 31,000 in 2020 relative to a prepandemic trend but increased by 71,000 in 2021. The data for California suggest that US births remained elevated through February 2023. The baby bump was most pronounced for first births and women under age 25, suggesting that the pandemic led some women to start families earlier. Above age 25, the baby bump was most pronounced for women aged 30 to 34 and women with a college education. The 2021 to 2022 baby bump is especially remarkable given the large declines in fertility rates that would have been projected by standard statistical models.

Keywords: COVID-19 | fertility | baby bump

Significance: We show that US fertility rates fell by much less than predicted by standard economic models in 2020, masking two separate patterns. The number of births to foreign-born women fell sharply in early 2020, while US-born women saw little decline in percentage terms and experienced a “baby bump” in 2021. Data from California suggest that the postpandemic increase in fertility among US-born women continued through February 2023. Not only was this the first recession in recent history not followed by a baby bust, but the 2021 baby bump marked the first reversal in declining fertility rates since the Great Recession. Increases in first births and births to college-educated mothers were especially large in 2021.