

References

Aktuell

DROR 2022

Amiel A. Dror et al., *Pre-infection 25-hydroxyvitamin D3 levels and association with severity of COVID-19 illness*. [PLoS ONE 17 \(2022\), e263069](#). DOI:10.1371/journal.pone.0263069.

Among hospitalized COVID-19 patients, pre-infection deficiency of vitamin D was associated with increased disease severity and mortality.

Amiel A. Dror, Nicole Morozov, Amani Daoud, Yoav Namir, Orly Yakir, Yair Shachar, Mark Lifshitz, Ella Segal, Lior Fisher, Matti Mizrahi, Netanel Eisenbach, Doaa Rayan, Maayan Gruber, Amir Bashkin, Edward Kaykov, Masad Barhoum, Michael Edelstein & Eyal Sela

GEIBERT 2022

Walter Geibert, Jens Matthiessen, Jutta Wollenburg & Ruediger Stein, *No freshwater-filled glacial Arctic Ocean, Replying to R. F. Spielhagen et al.* [nature 602 \(2022\), e4–e6](#).

[n590-0097-RepSuppl.pdf](#)

In summary, we find that the arguments against a glacial freshwater Arctic Ocean mostly rely on the use of one proxy that is not appropriate here, and poorly preserved. Planktic foraminifera could not grow under the thick ice shelf that is known to have been present, and they cannot grow at substantially reduced salinities. It is therefore unsurprising that they are virtually absent in the respective layers, and that they do not mirror the situation accurately.

HERBY 2022

Jonas Herby, Lars Jonung & Steve H. Hanke, *A literature review and meta-analysis of the effects of lockdowns on Covid-19 mortality*. [Studies in Applied Economics 2022, 200, 1–62](#).

This systematic review and meta-analysis are designed to determine whether there is empirical evidence to support the belief that “lockdowns” reduce COVID-19 mortality. Lockdowns are defined as the imposition of at least one compulsory, non-pharmaceutical intervention (NPI). NPIs are any government mandate that directly restrict peoples’ possibilities, such as policies that limit internal movement, close schools and businesses, and ban international travel. This study employed a systematic search and screening procedure in which 18,590 studies are identified that could potentially address the belief posed. After three levels of screening, 34 studies ultimately qualified. Of those 34 eligible studies, 24 qualified for inclusion in the meta-analysis. They were separated into three groups: lockdown stringency index studies, shelter-in-placeorder (SIPO) studies, and specific NPI studies. An analysis of each of these three groups support the conclusion that lockdowns have had little to no effect on COVID-19 mortality. More specifically, stringency index studies find that lockdowns in Europe and the United States only reduced COVID-19 mortality by 0.2% on average. SIPOs were also ineffective, only reducing COVID-19 mortality by 2.9% on average. Specific NPI studies also find no broad-based evidence of noticeable effects on COVID-19 mortality.

While this meta-analysis concludes that lockdowns have had little to no public health effects, they have imposed enormous economic and social costs where they have been adopted. In consequence, lockdown policies are ill-founded and should be rejected as a pandemic policy instrument.

Keywords: COVID-19 | lockdown | non-pharmaceutical interventions | mortality | systematic review | meta-analysis

PILLER 2022

Charles Piller, *Failing the test*. [science 375 \(2022\), 484–489](#).

DNA barcoding brought botanist Steven Newmaster scientific fame and entrepreneurial success. Was it all based on fraud?

[They] took a hard look at popular herbal products such as echinacea, ginkgo biloba, and St. John’s wort. The results were troubling. Most of the tested products contained different plants, were larded with inert fillers, or were tainted with contaminants that could cause liver and colon damage, skin tumors, and other serious health problems.

SPIELHAGEN 2022

Robert F. Spielhagen, Jan C. Scholten, Henning A. Bauch & Anton Eisenhauer, *No freshwater-filled glacial Arctic Ocean, Arising from W. Geibert et al.* [nature 602 \(2022\), e1–e3](#).

[n590-0097-ComSupp1.pdf](#)

Last, the authors calculate a volume of about 12 million km³ of liquid freshwater that was stored under the proposed ice shelf during MIS 4 and late MIS 6 (freshwater stored in the ice not considered). For comparison, the various lakes at the southern and eastern margin of the Late Weichselian Laurentian ice sheet in North America (subsumed as lakes Agassiz and Ojibway) had a total volume of around 0.3 million km³. Using an estimate of 41 million km² for the area of the North Atlantic Ocean, an even spread would result in a cover of approximately 200 m of pure freshwater with an extremely low d18O signature for the entire North Atlantic–Arctic region (or around 20 m for the entire world ocean). A huge freshwater outflow event from the Arctic delivering freshwater volumes two to three orders of magnitude larger than lakes Agassiz and Ojibway is unlikely to be overlooked in North Atlantic palaeoceanographic records.

WATSON 2022

Clare Watson, *Three, four or more, What’s the magic number for boosters?* [nature 602 \(2022\), 17–18](#).

Endless boosting with COVID vaccines might not be a practical or sustainable strategy.

WERTHEIM 2022

Joel O. Wertheim, *When viruses become more virulent, Natural selection favors virulence when it is coupled with increased viral transmission.* [science 375 \(2022\), 493–494](#). DOI:10.1126/science.abn4887.

WILLYARD 2022

Cassandra Willyard, *The Omicron wave’s surprising lessons for long-term immunity.* [nature 602 \(2022\), 22–25](#).

Immunologists have raced to work out how to protect against new variants of SARS-CoV-2. Their research has yielded a wealth of insights.

The good news about boosters, however, comes with a caveat. It's not clear how long booster protection will last. Data from the United Kingdom suggest it could wane quickly¹³. Three doses of the Pfizer–BioNTech vaccine provided 70% protection initially. But by 10 weeks, protection against infection had dropped to 45%. And reports emerging from Israel suggest that a fourth-dose booster doesn't seem to elevate protection effectively.

What seems to matter, Slifka says, is the amount of time the antigen sticks around. "You don't have to be chronically infected," he says, "but it has to maintain stimulation of the immune system for a certain amount of time."

For mRNA vaccines, the antigen gets produced by cells in the body (from an mRNA template). It sticks around for just a few weeks. And the evidence so far suggests that immunity might also be transient.

Anthropologie

BARASH 2022

Alon Barash, Miriam Belmaker, Omry Barzilai & Ella Been et al., *The earliest Pleistocene record of a large-bodied hominin from the Levant supports two out-of-Africa dispersal events*. [Scientific Reports 12 \(2022\), 1721](#). DOI:10.1038/s41598-022-05712-y.

[SciRep12-01721-Supplement.pdf](#)

The paucity of early Pleistocene hominin fossils in Eurasia hinders an in-depth discussion on their paleobiology and paleoecology. Here we report on the earliest large-bodied hominin remains from the Levantine corridor: a juvenile vertebra (UB 10749) from the early Pleistocene site of 'Ubeidiya, Israel, discovered during a reanalysis of the faunal remains. UB 10749 is a complete lower lumbar vertebral body, with morphological characteristics consistent with *Homo* sp. Our analysis indicates that UB-10749 was a 6- to 12-year-old child at death, displaying delayed ossification pattern compared with modern humans. Its predicted adult size is comparable to other early Pleistocene large-bodied hominins from Africa. Paleobiological differences between UB 10749 and other early Eurasian hominins supports at least two distinct out-of-Africa dispersal events. This observation corresponds with variants of lithic traditions (Oldowan; Acheulian) as well as various ecological niches across early Pleistocene sites in Eurasia.

Alon Barash, Miriam Belmaker, Markus Bastir, Michalle Soudack, Haley D. O'Brien, Holly Woodward, Amy Prendergast, Omry Barzilai & Ella Been

BARR 2022

W. Andrew Barr, Briana Pobiner, John Rowan, Andrew Du & J. Tyler Faith, *No sustained increase in zooarchaeological evidence for carnivory after the appearance of *Homo erectus**. [PNAS 119 \(2022\), e2115540119](#).

[pnas119-e2115540119-Supplement.pdf](#)

The appearance of *Homo erectus* shortly after 2.0 Ma is widely considered a turning point in human dietary evolution, with increased consumption of animal tissues driving the evolution of larger brain and body size and a reorganization of the gut. An increase in the size and number of zooarchaeological assemblages after the appearance of *H. erectus* is often offered as a central piece of archaeological evidence for increased carnivory in this species, but this characterization has yet to be subject to detailed scrutiny. Any widespread dietary shift leading to the acquisition of key traits in *H. erectus* should be persistent in the zooarchaeological

record through time and can only be convincingly demonstrated by a broad-scale analysis that transcends individual sites or localities. Here, we present a quantitative synthesis of the zooarchaeological record of eastern Africa from 2.6 to 1.2 Ma. We show that several proxies for the prevalence of hominin carnivory are all strongly related to how well the fossil record has been sampled, which constrains the zooarchaeological visibility of hominin carnivory. When correcting for sampling effort, there is no sustained increase in the amount of evidence for hominin carnivory between 2.6 and 1.2 Ma. Our observations undercut evolutionary narratives linking anatomical and behavioral traits to increased meat consumption in *H. erectus*, suggesting that other factors are likely responsible for the appearance of its human-like traits.

Keywords: zooarchaeology | *Homo erectus* | human diet | carnivory | sampling

Significance: Many quintessential human traits (e.g., larger brains) first appear in *Homo erectus*. The evolution of these traits is commonly linked to a major dietary shift involving increased consumption of animal tissues. Early archaeological sites preserving evidence of carnivory predate the appearance of *H. erectus*, but larger, well-preserved sites only appear after the arrival of *H. erectus*. This qualitative pattern is a key tenet of the “meat made us human” viewpoint, but data from sites across eastern Africa have not been quantitatively synthesized to test this hypothesis. Our analysis shows no sustained increase in the relative amount of evidence for carnivory after the appearance of *H. erectus*, calling into question the primacy of carnivory in shaping its evolutionary history.

SCHUSTER 2022

Ruth Schuster, *Archaeologists Discover Missing Link in Human Evolution, in Israel*. [Haaretz 2022, Feb. 2](#).

A hominin died in Jordan Valley 1.5 million years ago – and isn’t the same species as the hominins who reached central Asia 1.8 million years ago. Israeli archaeologists prove there were multiple exits from Africa, and by more than one human species

Bibel

FRESE 2020

Daniel A. Frese, *The City Gate in Ancient Israel and Her Neighbors, The Form, Function, and Symbolism of the Civic Forum in the Southern Levant*. *Culture and History of the Ancient Near East* 108 ([Leiden 2020](#)).

Frese Gate-Bilder.zip

The civic forum in ancient Israel affected the culture profoundly, and its pervasive influence is clearly visible in the hundreds of references to gates in the Hebrew Bible and the literature of the ANE. We began this study by looking at the physical shape of gates in the southern Levant, clarifying many details about their architectural form. We saw that both gatehouses and gate complexes were purposely designed to create public space, while maintaining a high degree of defensibility. We also surveyed the most common ways in which this space functioned: for public notice and assembly, the gathering of the town elders, the public presentation of the king, legal and judicial proceedings, cultic practices, commercial use, agricultural practices (?), and of course military defense.

These diverse functions of the forum led to the gate’s conceptual significance and its symbolism in ancient Israel. The term “gate” can refer by metonymy or synecdoche to the town, the city council, the townspeople, the legal system, the

place of execution, or Israelite society. Gates are symbolic of kingly assertions of power and independence, and of community well-being. And gates are symbolic of many conceptual boundaries: between the realms of the profane and the sacred, between civilization and nature, between the Israelite community and outsiders, between earth and heaven, between life and death.

NA'AMAN 2020

Nadav Na'aman, *The Contest on Mount Carmel (1 Kings 18:19–40)*. *Biblische Zeitschrift* **64** (2020), 85–100.

The article suggests that the story of the contest on Mount Carmel (1 Kgs 18:19–40) is a complete literary unit that was written by a single author in the early Persian period and inserted into the deuteronomistic story-cycle of Elijah. The story is entirely legendary and reflects the polemic of a devotee of YHWH against the contemporaneous spread of the Phoenician cult and culture. The attachment of the story to Mount Carmel may reflect the occasion of the establishment of a Tyrian/Sidonian temple on one of the mountain's peaks, but this hypothesis cannot be verified. The story conveys a clear religious message of the absolute power of YHWH and the worthlessness of all other gods – in particular the Phoenician God Ba'al – and of the fallacy of the belief in his divine power.

Keywords: Elijah | Mount Carmel | Tyre | Sidon | Melqart | Ba'al Shamêm | Mizpeh Yammim

NA'AMAN 2020

Nadav Na'aman, *Was the Reign of Jeroboam II a Period of Literary Flourishing?* *Hebrew Bible and Ancient Israel* **9** (2020), 348–365.

Recently, some scholars suggested dating the composition of several biblical works to the reign of Jeroboam II. Among these are the history of the Northern Kingdom, the pre-Priestly story of Jacob, the pre-Priestly Exodus story, the “book of the Saviours,” and the Elisha story cycle. This article systematically analyzes these and other works whose composition was attributed to Jeroboam's reign and dismisses the proposed date of composition. It concludes that the image of the time of Jeroboam as an age of literary flourish is greatly exaggerated, and that there is no support for the claim that literary works known to us from the biblical literature were composed in writing in the court of Samaria during this king's reign. **Keywords:** Northern Kingdom, literacy, Jeroboam I, Jeroboam II, Jacob story, Exodus story, Book of the Saviours, Jehu, Elisha story-cycle

NA'AMAN 2020

Nadav Na'aman, *Egyptian Centres and the Distribution of the Alphabet in the Levant*. *Tel Aviv: Archaeology* **47** (2020), 29–54.

The article contends that the adoption of the alphabetic script in the Levant in the LB II–early Iron Age is best explained by the scribal activity of the Empire's representatives in the Egyptian centres of government and by the display of artefacts written in the hieroglyphic script in these centres. The early alphabetic inscriptions clustered mainly in regions located near the Egyptian centres of Gaza, Joppa, Beth-shean and Kumidi and the city-states of Lachish and Byblos. The latter was the first city that developed extensive writing in the alphabetic script and the first to form a scribal school under the patronage of its royal court. Although the Egyptian display inscriptions and scribal culture inspired the local Canaanite elites, the latter, rather than adopting the prestigious Egyptian script and language, absorbed only the idea of writing, and applied it to their culture in the revolutionary medium invented hundreds of years earlier in the Sinai Peninsula.

Keywords: Alphabet | Egyptian centres | Gaza | Lachish | Beth-shean | Rehob | Kumidi | Byblos | Wenamun | Canaanite elite

Datierung

ANDREAE 2022

Meinrat O. Andrae & Tracey W. Andrae, *Archaeometric studies on rock art at four sites in the northeastern Great Basin of North America*. *PLoS ONE* **17** (2022), e263189. DOI:10.1371/journal.pone.0263189.

pone17-e0263189-Supplement1.pdf, pone17-e0263189-Supplement2.pdf, pone17-e0263189-Supplement3.pdf, pone17-e0263189-Supplement4.pdf, pone17-e0263189-Supplement5.pdf

Rock art originated some 46,000 years ago and can provide unique insights into the minds of our human ancestors. However, dating of these ancient images, especially of petroglyphs, remains a challenge. In this study, we explore the potential of deriving age estimates from measurements of the areal densities of manganese (DMn) and iron (DFe) in the rock varnish on petroglyphs, based on the concept that the amount of varnish that has regrown on a petroglyph since its creation, relative to the surrounding intact varnish, is a measure of its age. We measured DMn and DFe by portable X-ray fluorescence (pXRF) on dated Late Pleistocene and Holocene rock surfaces, from which we derived accumulation rates of Mn and Fe in the rock varnish. The observed rates were comparable to our previous findings on basalt surfaces in North America. We derived age estimates for the rock art at four sites in the northern Great Basin region of North America based on DMn measurements on the petroglyphs and intact varnish. They suggest that rock art creation in this region began around the Pleistocene/Holocene transition and continued into the Historic Period, encompassing a wide range of styles and motifs. Evidence of reworking of the rock art at various times by Indigenous people speaks of the continued agency of these images through the millennia. Our results are in good agreement with chronologies based on archeological and other archaeometric techniques. While our method remains subject to significant uncertainty with regard to the absolute ages of individual images, it provides the unique opportunity to obtain age estimates for large ensembles of images without the need for destructive sampling.

Energie

LENNON 2022

Alison Lennon, Marina Lunardi, Brett Hallam & Pablo R. Dias, *The aluminium demand risk of terawatt photovoltaics for net zero emissions by 2050*. *Nature Sustainability* (2022), preprint, 1–7. DOI:10.1038/s41893-021-00838-9.

NatSust2022.02-Lennon-Supplement.pdf

The broad electrification scenario of recent photovoltaics roadmaps predicts that by 2050 we will need more than 60 TW of photovoltaics installed and must be producing up to 4.5 TW of additional capacity each year if we are to rapidly reduce emissions to ‘net zero’ and limit global warming to <2 °C. Given that at the end of 2020, just over 700 GW peak was installed, this represents an enormous manufacturing task that will create a demand for a variety of minerals. We predict that growth to 60 TW of photovoltaics could require up to 486 Mt of aluminium by 2050. A key concern for this large aluminium demand is its large global warming potential. We show that it will be critical to maximize the use of secondary aluminium and rapidly decarbonize the electricity grid within 10 years if cumulative emissions are to be kept below 1,000 Mt of CO₂ equivalent by 2050.

Klima

WILLIAMS 2022

John W. Williams, *Bottom-up versus top-down megafauna–vegetation interactions in ancient Beringia*. [PNAS 119 \(2022\), e2121734119](#).

The authors show that the shrub expansion in eastern Beringia mostly happened first, between 16,000 and 14,000 y ago, while the megafaunal declines and extinctions happened later, between 15,000 and 12,000 y ago. Moreover, shrub tundra expanded during a time of frequent bone occurrences for the now-extinct woolly mammoth and horse, suggesting that tundra shrub expansion was not hindered by these grazers.

Kultur

CREVECOEUR 2021

Isabelle Crevecoeur, Marie-Hélène Dias-Meirinho, Antoine Zazzo, Daniel Antoine & François Bon, *New insights on interpersonal violence in the Late Pleistocene based on the Nile valley cemetery of Jebel Sahaba*. [Scientific Reports 11 \(2021\), 9991. DOI:10.1038/s41598-021-89386-y](#).

[SciRep11-09991-Supplement.pdf](#)

The remains of 61 individuals buried in the cemetery of Jebel Sahaba (site 117) offer unique and substantial evidence to the emergence of violence in the Nile Valley at the end of the Late Pleistocene. Excavated and assessed in the 1960s, some of the original findings and interpretations are disputed. A full reanalysis of the timing, nature and extent of the violence was conducted through the microscopic characterization of the nature of each osseous lesion, and the reassessment of the archaeological data. Over 100 previously undocumented healed and unhealed lesions were identified on both new and/or previously identified victims, including several embedded lithic artefacts. Most trauma appears to be the result of projectile weapons and new analyses confirm for the first time the repetitive nature of the interpersonal acts of violence. Indeed, a quarter of the skeletons with lesions exhibit both healed and unhealed trauma. We dismiss the hypothesis that Jebel Sahaba reflects a single warfare event, with the new data supporting sporadic and recurrent episodes of inter-personal violence, probably triggered by major climatic and environmental changes. At least 13.4 ka old, Jebel Sahaba is one of the earliest sites displaying interpersonal violence in the world.

Methoden

LJUNGQVIST 2022

Fredrik Charpentier Ljungqvist et al., *Regional Patterns of Late Medieval and Early Modern European Building Activity Revealed by Felling Dates*. [Frontiers in Ecology and Evolution 9 \(2022\), 825751](#).

Although variations in building activity are a useful indicator of societal well-being and demographic development, historical datasets for larger regions and longer periods are still rare. Here, we present 54,045 annually precise dendrochronological felling dates from historical construction timber from across most of Europe between 1250 and 1699 CE to infer variations in building activity. We use geostatistical techniques to compare spatiotemporal dynamics in past European

building activity against independent demographic, economic, social and climatic data. We show that the felling dates capture major geographical patterns of demographic trends, especially in regions with dense data coverage. A particularly strong negative association is found between grain prices and the number of felling dates. In addition, a significant positive association is found between the number of felling dates and mining activity. These strong associations, with well-known macro-economic indicators from preindustrial Europe, corroborate the use of felling dates as an independent source for exploring large-scale fluctuations of societal well-being and demographic development. Three prominent examples are the building boom in the Hanseatic League region of northeastern Germany during the 13th century, the onset of the Late Medieval Crisis in much of Europe c. 1300, and the cessation of building activity in large parts of central Europe during armed conflicts such as the Thirty Years' War (1618–1648 CE). Despite new insights gained from our European-wide felling date inventory, further studies are needed to investigate changes in construction activity of high versus low status buildings, and of urban versus rural buildings, and to compare those results with a variety of historical documentary sources and natural proxy archives.

Keywords: archeology | cultural heritage | dendrochronology | dendroarchaeology | felling dates | history | historical | demography

Fredrik Charpentier Ljungqvist, Andrea Seim, Willy Tegel, Paul J. Krusic, Claudia Baittinger, Christelle Belingard, Mauro Bernabei, Niels Bonde, Paul Borghaerts, Yann Couturier, Anne Crone, Sjoerd van Daalen, Aoife Daly, Petra Doeve, Marta Domínguez-Delmás, Jean-Louis Edouard, Thomas Frank, Christian Ginzler, Michael Grabner, Friederike M. Gschwind, Kristof Haneca, Anton Hansson, Franz Herzig, Karl-Uwe Heussner, Jutta Hofmann, David Houbrechts, Ryszard J. Kaczka, Tomáš Kolář, Raymond Kontic, Tomáš Kyncl, Vincent Labbas, Per Lageras, Yannick Le Digol, Melaine Le Roy, Hanns Hubert Leuschner, Hans Linderson, Francis Ludlow, Axel Marais, Coralie M. Mills, Mechthild Neyses-Eiden, Kurt Nicolussi, Christophe Perrault, Klaus Pfeifer, Michal Rybníček, Andreas Rzepecki, Martin Schmidhalter, Mathias Seifert, Lisa Shindo, Barbara Spyt, Josué Susperregi, Helene Lovstrand Svarva, Terje Thun, Felix Walder, Tomasz Ważyński, Elise Werthe, Thorsten Westphal, Rob Wilson & Ulf Büntgen

Religion

MOSENKIS 2017

Iurii Mosenkis, *Historicity of the Bible astronomically decoded*. unknown (2017), preprint, 1–32. <<http://www.academia.edu/34034517>>.

Thus, the Old Testament texts and related apocrypha include the exact astronomical knowledge (influenced by the Egyptians, the Sumerians and Babylonians, the Minoans and the Mycenaean Greeks, and the European megalithic peoples) which were collected till the beginning of the first millennium BC when the codification of the Old Testament began. The Old Testament and the Books of Enoch are comparable with the Babylonian astronomical catalogue (MUL.APIN), compiled at the same period of time.

Sprachlehre

BROCKELMANN 1895

Carl Brockelmann, *Lexicon Syriacum*. (Eugene 1895). <<http://archive.org/details/32882013057610-lexiconsyriacum>> (2004).

Scan der zweiten verbesserten Auflage von 1928.

Story or Book

LANGIN 2022

Katie Langin, *Imagining Rosalind Franklin*. [science 375 \(2022\)](#), 504.

The crystallographer's story comes alive in a work of historical fiction.

Her Hidden Genius: A Novel. Marie Benedict. Sourcebooks Landmark, 2022. 304 pp.

Overall, Benedict's retelling of Franklin's story offers a compelling look at the scientist's impressive and all-too-short life. It also raises broader questions about the scientific enterprise: Are conditions much better for women scientists today? Does academia's first-to-publish reward system pervert the process of science? Who deserves credit for a scientific discovery? There are no easy answers in *Her Hidden Genius*, but there is much food for thought.

ZERILLI 2022

John Zerilli, *From dualism to deism, A philosopher comes full circle*. [science 375 \(2022\)](#), 503.

There is "a serious possibility" that our universe is a computer simulation run by an advanced civilization. There are a few strands to the argument, but the nub of it is that if an intelligent civilization lasts long enough, it will likely develop simulation technology and create many simulated universes inhabited by intelligent beings. Under minimal assumptions, it can be shown that these simulated universes will greatly outnumber nonsimulated ones. Thus, any extant intelligence has a considerably greater chance of being simulated than not.

Reality+: Virtual Worlds and the Problems of Philosophy. David J. Chalmers. Norton, 2022. 544 pp.

Chalmers has something to say on most of the "big questions" in philosophy: on the immortality of the soul (simulations "may at least make an afterlife possible"); the freedom of the will ("the jury is still out"); the existence of an external world (even a simulated world would be real; it's just that at the most fundamental level it would be made up of bits in the simulator's computer, not quarks and electrons); and, of course, the existence of God.