Liste erstellt am 2022-11-14

References

Aktuell

Bruttel 2022

Valentin Bruttel, Alex Washburne & Antonius VanDongen, *Endonuclease fingerprint indicates a synthetic origin of SARS-CoV-2*. bioRxiv **2022**, Oct. 20, 1–17. DOI:10.1101/2022.10.18.512756.

To prevent future pandemics, it is important that we understand whether SARS-CoV-2 spilled over directly from animals to people, or indirectly in a laboratory accident. The genome of SARSCOV2 contains a peculiar pattern of unique restriction endonuclease recognition sites allowing efficient dis- and re-assembly of the viral genome characteristic of synthetic viruses. Here, we report the likelihood of observing such a pattern in coronaviruses with no history of bioengineering. We find that SARS-CoV-2 is an anomaly, more likely a product of synthetic genome assembly than natural evolution. The restriction map of SARS-CoV-2 is consistent with many previously reported synthetic coronavirus genomes, meets all the criteria required for an efficient reverse genetic system, differs from closest relatives by a significantly higher rate of synonymous mutations in these synthetic-looking recognitions sites, and has a synthetic fingerprint unlikely to have evolved from its close relatives. We report a high likelihood that SARSCoV2 may have originated as an infectious clone assembled in vitro.

Lay Summary

To construct synthetic variants of natural coronaviruses in the lab, researchers often use a method called in vitro genome assembly. This method utilizes special enzymes called restriction enzymes to generate DNA building blocks that then can be "stitched" together in the correct order of the viral genome. To make a virus in the lab, researchers usually engineer the viral genome to add and remove stitching sites, called restriction sites. The ways researchers modify these sites can serve as fingerprints of in vitro genome assembly. We found that SARS-CoV has the restriction site fingerprint that is typical for synthetic viruses. The synthetic fingerprint of SARS-CoV-2 is anomalous in wild coronaviruses, and common in lab-assembled viruses. The type of mutations (synonymous or silent mutations) that differentiate the restriction sites in SARS-CoV-2 are characteristic of engineering, and the concentration of these silent mutations in the restriction sites is extremely unlikely to have arisen by random evolution. Both the restriction site fingerprint and the pattern of mutations generating them are extremely unlikely in wild coronaviruses and nearly universal in synthetic viruses. Our findings strongly suggest a synthetic origin of SARS-CoV2.

Liu 2021

Jiping Liu et al., *Comprehensive investigations revealed consistent pathophysiological alterations after vaccination with COVID-19 vaccines*. Cell Discovery **7** (2021), 99, 1–15. DOI:10.1038/s41421-021-00329-3.

Large-scale COVID-19 vaccinations are currently underway in many countries in response to the COVID-19 pandemic. Here, we report, besides generation of neutralizing antibodies, consistent alterations in hemoglobin A1c, serum sodium

and potassium levels, coagulation profiles, and renal functions in healthy volunteers after vaccination with an inactivated SARS-CoV-2 vaccine. Similar changes had also been reported in COVID-19 patients, suggesting that vaccination mimicked an infection. Single-cell mRNA sequencing (scRNA-seq) of peripheral blood mononuclear cells (PBMCs) before and 28 days after the first inoculation also revealed consistent alterations in gene expression of many different immune cell types. Reduction of CD8+ T cells and increase in classic monocyte contents were exemplary. Moreover, scRNA-seq revealed increased NF-.B signaling and reduced type I interferon responses, which were confirmed by biological assays and also had been reported to occur after SARS-CoV-2 infection with aggravating symptoms. Altogether, our study recommends additional caution when vaccinating people with pre-existing clinical conditions, including diabetes, electrolyte imbalances, renal dysfunction, and coagulation disorders.

Jiping Liu, Junbang Wang, Jinfang Xu, Han Xia, Yue Wang, Chunxue Zhang, Wei Chen, Huina Zhang, Qi Liu, Rong Zhu, Yiqi Shi, Zihao Shen, Zhonggang Xing, Wenxia Gao, Liqiang Zhou, Jinliang Shao, Jiayu Shi, Xuejiao Yang, Yaxuan Deng, Li Wu, Quan Lin, Changhong Zheng, Wenmin Zhu, Congrong Wang, Yi E. Sun & Zhongmin Liu

Archäologie

Barth 2004

Reinhard Barth, Mathias Forster, Daniela Kronseder & Nora Wiedenmann, *Bildatlas Weltgeschichte, Eine Chronik von den Anfängen bis heute*. (St. Gallen 2004).

Bibel

Cantrell 2011

Deborah O'Daniel Cantrell, *The Horsemen of Israel, Horses and Chariotry in Monarchic Israel (Ninth–Eighth Centuries* B.C.E.*)*. History, Archaeology, and Culture of the Levant 1 (Winona Lake 2011).

Dershowitz 2015

Idan Dershowitz, Moshe Koppel, Navot Akiva & Nachum Dershowitz, *Computerized Source Criticism of Biblical Texts*. Journal of Biblical Literature **134** (2015), 253–271.

We have developed an automated method to separate biblical texts according to author or scribal school. At the core of this new approach is the identiication of correlations in word preference that are then used to quantify stylistic similarity between sections. In so doing, our method ignores literary features—such as possible repetitions, narrative breaks, and contradictions—and focuses on the least subjective criterion employed by Bible scholars to identify signs of composition. The computerized system is unique in its ability to consider subtle stylistic preferences in aggregate, whereas human scholars are generally limited to cases where a word preference is pronounced. Our method is also less liable to accusations of bias, thanks to its reliance on context-independent criteria. Its eicacy is demonstrated in its successful deconstruction of an artiicial book, Jer-iel, made up of randomly interleaved snippets from Jeremiah and Ezekiel. When applied to Genesis–Numbers, the method divides the text into constituents that correlate

closely with common notions of “Priestly” and “non-Priestly” material. No such corroboration is forthcoming for the classic Yahwistic/Elohistic division.

Finkelstein 2011

Israel Finkelstein & Nadav Na’aman (Hrsg.), *The Fire Signals of Lachish, Archaeology and History of Israel in the Late Bronze Age, Iron Age, and Persian Period in Honor of David Ussishkin*. (Winona Lake 2011).

Vaknin 2022

Yoav Vaknin et al., *Reconstructing biblical military campaigns using geomagnetic field data*. PNAS **119** (2022), e2209117119.

pnas119-e2209117119-Supplement1.pdf, pnas119-e2209117119-Supplement2.pdf

The Hebrew Bible and other ancient Near Eastern texts describe Egyptian, Aramean, Assyrian, and Babylonian military campaigns to the Southern Levant during the 10th to sixth centuries BCE. Indeed, many destruction layers dated to this period have been unearthed in archaeological excavations. Several of these layers are securely linked to specific campaigns and are widely accepted as chronological anchors. However, the dating of many other destruction layers is often debated, challenging the ability to accurately reconstruct the different military campaigns and raising questions regarding the historicity of the biblical narrative. Here, we present a synchronization of the historically dated chronological anchors and other destruction layers and artifacts using the direction and/ or intensity of the ancient geomagnetic field recorded in mud bricks from 20 burnt destruction layers and in two ceramic assemblages. During the period in question, the geomagnetic field in this region was extremely anomalous with rapid changes and highintensity values, including spikes of more than twice the intensity of today’s field. The data are useful in the effort to pinpoint these short-term variations on the timescale, and they resolve chronological debates regarding the campaigns against the kingdoms of Israel and Judah, the relationship between the two kingdoms, and their administrations.

Keywords: archaeomagnetism | archaeomagnetic spike | archaeomagnetic dating | chronology | archaeointensity

Yoav Vaknin, Ron Shaar, Oded Lipschits, Amihai Mazar, Aren M. Maeir, Yosef Garfinkel, Liora Freud, Avraham Faust, Ron E. Tappy, Igor Kreimerman, Saar Ganor, Karen Covello-Paran, Omer Sergi, Zeev Herzog, Rami Arav, Zvi Lederman, Stefan Münger, Alexander Fantalkin, Seymour Gitin & Erez Ben-Yosef

Significance: Studying the events described in the Hebrew Bible is a complex task that involves textual and archaeological investigation and often bears highly contentious Results. Here, we introduce an approach that applies archaeomagnetic investigation to the remains of ancient towns that were destroyed by fire. The new magnetic data provided chronological insights that enabled linking archaeological contexts with specific military campaigns, shedding new light on the history of the biblical kingdoms of Israel and Judah. This interdisciplinary study also reconstructs the behavior of the geomagnetic field during a unique period in its history, when it changed rapidly and exceeded twice the intensity of today’s field. This has significant implications for various fields of research, including geodynamic modeling in geophysics.

Biologie

Granovetter 2022

Michael C. Granovetter, Sophia Robert, Leah Ettensohn & Marlene Behrmann, *With childhood hemispherectomy, one hemisphere can support—but is suboptimal for—word and face recognition.* PNAS **119** (2022), e2212936119.

pnas119-e2212936119-Supplement.pdf

The right and left cerebral hemispheres are important for face and word recognition, respectively—a specialization that emerges over human development. The question is whether this bilateral distribution is necessary or whether a single hemisphere, be it left or right, can support both face and word recognition. Here, face and word recognition accuracy in patients (median age 16.7 y) with a single hemisphere following childhood hemispherectomy was compared against matched typical controls. In experiment 1, participants viewed stimuli in central vision. Across both face and word tasks, accuracy of both left and right hemispherectomy patients, while significantly lower than controls' accuracy, averaged above 80 % and did not differ from each other. To compare patients' single hemisphere more directly to one hemisphere of controls, in experiment 2, participants viewed stimuli in one visual field to constrain initial processing chiefly to a single (contralateral) hemisphere. Whereas controls had higher word accuracy when words were presented to the right than to the left visual field, there was no field/hemispheric difference for faces. In contrast, left and right hemispherectomy patients, again, showed comparable performance to one another on both face and word recognition, albeit significantly lower than controls. Altogether, the findings indicate that a single developing hemisphere, either left or right, may be sufficiently plastic for comparable representation of faces and words. However, perhaps due to increased competition or "neural crowding," constraining cortical representations to one hemisphere may collectively hamper face and word recognition, relative to that observed in typical development with two hemispheres.

Keywords: word recognition | face recognition | development | plasticity | hemispherectomy

Significance: Can one brain hemisphere perform the functions of the typical two hemispheres? Typically, in adults, there are right and left hemispheric biases for face and word recognition, respectively, a division of labor that emerges over development. Here, face and word recognition were examined in childhood hemispherectomy patients, who have a single hemisphere. While these patients showed above 80 % task accuracy for both visual classes—surprisingly high relative to the brain volume resected—they nonetheless performedmore poorly than neurotypical controls. Importantly, patient performance was independent of which hemisphere was removed, suggesting that their single, preserved hemisphere subserves face and word recognition comparably, albeit somewhat inferiorly relative to controls. This demonstrates remarkable plasticity of the developing brain but, at the same time, Highlights plasticity's constraints.

Datierung

Peters 2022

Joris Peters et al., *The biocultural origins and dispersal of domestic chickens.* PNAS **119** (2022), e2121978119.

pnas119-e2121978119-Supplement.pdf, pnas119-e2121978119-Comment1.pdf, pnas119-e2121978119-Reply1.pdf

Though chickens are the most numerous and ubiquitous domestic bird, their origins, the circumstances of their initial association with people, and the routes along which they dispersed across the world remain controversial. In order to establish a robust spatial and temporal framework for their origins and dispersal, we assessed archaeological occurrences and the domestic status of chickens from ≈600 sites in 89 countries by combining zoogeographic, morphological, osteometric, stratigraphic, contextual, iconographic, and textual data. Our results suggest that the first unambiguous domestic chicken bones are found at Neolithic Ban Non Wat in central Thailand dated to ≈1650 to 1250 BCE, and that chickens were not domesticated in the Indian Subcontinent. Chickens did not arrive in Central China, South Asia, or Mesopotamia until the late second millennium BCE, and in Ethiopia and Mediterranean Europe by ≈800 BCE. To investigate the circumstances of their initial domestication, we correlated the temporal spread of rice and millet cultivation with the first appearance of chickens within the range of red junglefowl species. Our results suggest that agricultural practices focused on the production and storage of cereal staples served to draw arboreal red junglefowl into the human niche. Thus, the arrival of rice agriculture may have first facilitated the initiation of the chicken domestication process, and then, following their integration within human communities, allowed for their dispersal across the globe.

Keywords: domestication | chickens | dispersal | human niche

Joris Peters, Ophélie Lebrasseur, Evan K. Irving-Pease, Ptolemaios Dimitrios Paxinos, Julia Best, Riley Smallman, Cécile Callou, Armelle Gardeisen, Simon Trixl, Laurent Frantz, Naomi Sykes, Dorian Q. Fuller & Greger Larson

Significance: Chickens are the world'smost numerous domestic animal. In order to understand when, where, and how they first became associated with human societies, we critically assessed the domestic status of chicken remains described in >600 sites in 89 countries, and evaluated zoogeographic, morphological, osteometric, stratigraphic, contextual, iconographic, and textual data. Although previous studies havemade claims for an early origin of chickens, our results suggest that unambiguous chickens were not present until ≈1650 to 1250 BCE in central Thailand. A correlation between early chickens and the first appearance of rice and millet cultivation suggests that the production and storage of these cereals may have acted as a magnet, thus initiating the chicken domestication process.

Isotope

Casanova 2022

Emmanuelle Casanova, Alex Bayliss & Richard P. Evershed et al., *Dating the emergence of dairying by the first farmers of Central Europe using ^{14}C analysis of fatty acids preserved in pottery vessels.* PNAS **119** (2022), e2109325118.

pnas119-e2109325118-Supplement.pdf

Direct, accurate, and precise dating of archaeological pottery vessels is now achievable using a recently developed approach based on the radiocarbon dating of purified molecular components of food residues preserved in the walls of pottery vessels. The method targets fatty acids from animal fat residues, making it uniquely suited for directly dating the inception of new food commodities in prehistoric populations. Here, we report a large-scale application of the method by directly dating the introduction of dairying into Central Europe by the Linearbandkeramik (LBK) cultural group based on dairy fat residues. The radiocarbon dates (n = 27) from the 54th century BC from the western and eastern expansion

of the LBK suggest dairy exploitation arrived with the first settlers in the respective regions and were not gradually adopted later. This is particularly significant, as contemporaneous LBK sites showed an uneven distribution of dairy exploitation. Significantly, our findings demonstrate the power of directly dating the introduction of new food commodities, hence removing taphonomic uncertainties when assessing this indirectly based on associated cultural materials or other remains.

Keywords: radiocarbon dating | ceramics | dairy residues | Neolithic | Central Europe

Emmanuelle Casanova, Timothy D. J. Knowles, Alex Bayliss, Mélanie Roffet-Salque, Volker Heyd, Joanna Pyzel, Erich Claßen, László Domboróczki, Michael Ilett, Philippe Lefranc, Christian Jeunesse, Arkadiusz Marciniak, Ivo van Wijk & Richard P. Evershed

Significance: Calendrical dating for the introduction of new food commodities affords enhanced understanding of major changes in human food procurement. Here, direct dating of milk residues from the Early Neolithic in Central Europe demonstrates the use of this unique secondary product from animals arrived with the earliest Linearbandkeramik settlers in the western (France, the Netherlands, and northwestern Germany) and eastern (Poland) extensions of the cultural group. At a time when most adult humans lacked the lactase-persistence gene variant, the adoption and intensification of a dairy-based economy would have had significant impact on human diet, evolution, and environment.

Jaouen 2022

Klervia Jaouen et al., *A Neandertal dietary conundrum, Insights provided by tooth enamel Zn isotopes from Gabasa, Spain.* PNAS **119** (2022), e2109315119.

pnas119-e2109315119-Supplement.pdf

The characterization of Neandertals' diets has mostly relied on nitrogen isotope analyses of bone and tooth collagen. However, few nitrogen isotope data have been recovered from bones or teeth from Iberia due to poor collagen preservation at Paleolithic sites in the region. Zinc isotopes have been shown to be a reliable method for reconstructing trophic levels in the absence of organic matter preservation. Here, we present the results of zinc (Zn), strontium (Sr), carbon (C), and oxygen (O) isotope and trace element ratio analysis measured in dental enamel on a Pleistocene food web in Gabasa, Spain, to characterize the diet and ecology of a Middle Paleolithic Neandertal individual. Based on the extremely low d66Zn value observed in the Neandertal's tooth enamel, our Results support the interpretation of Neandertals as carnivores as already suggested by d15N isotope values of specimens from other regions. Further work could help identify if such isotopic peculiarities (lowest d66Zn and highest d15N of the food web) are due to a metabolic and/or dietary specificity of the Neandertals.

Keywords: carnivory | Middle Paleolithic | zinc isotope ratios | Iberian Neandertals | hominin

Klervia Jaouen, Vanessa Villalba-Mouco, Geoff M. Smith, Manuel Trost, Jennifer Leichliter, Tina Ludecke, Pauline Mejean, Stephanie Mandrou, Jerome Chmeleff, Danae Guiserix, Nicolas Bourgon, Fernanda Blasco, Jessica Mendes Cardoso, Camille Duquenoy, Zineb Moubtahij, Domingo C. Salazar Garcia, Michael Richards, Thomas Tutken, Jean-Jacques Hublin, Pilar Utrilla & Lourdes Montes

Significance: Neandertals' diets are a topic of continued debate, especially since their disappearance has been frequently attributed to their subsistence strategy. There is no clear consensus on how variable their diets were in time and space. Isotope studies have helped quantify meat consumption in Neandertals, but usu-

ally rely on nitrogen isotope analyses of collagen, a protein rarely preserved in samples older than 50 ka. Moreover, collagen extraction for isotope analyses is rarely successful in Iberian skeletal material. Here, we employ zinc isotope analysis of dental enamel of a Neandertal and associated fauna (Gabasa, Spain), which can be applied to contexts >50 ka. This proxy confirms a high level of carnivory in an Iberian Neandertal.

Judentum

Fine 2017

Steven Fine, Peter J. Schertz & Donald H. Sanders, *True Colors, Digital Reconstruction Restores Original Brilliance to the Arch of Titus*. Biblical Archaeology Review **43** (2017), iii, 28–35, 60–61.

Although many Greek and Roman statues and monuments now appear gleaming white (the result of years of weathering), they were originally brightly colored. Using technology, a team has digitally restored a panel from the Arch of Titus—which famously depicts captured treasures from Jerusalem's Temple being paraded through Rome—to its original color.

Fine 2017

Steven Fine, *The Arch of Titus in Color, Polychromy and the Spoils of Jerusalem*. City of David Studies of Ancient Jerusalem **12** (2017), 17–37.

Sauter 2022

Megan Sauter (Hrsg.), *The Dead Sea Scrolls, Past, Present, and Future*. BAR Special Supplement (Washington 2022).

Klima

Scoto 2022

Federico Scoto et al., *Sea ice fluctuations in the Baffin Bay and the Labrador Sea during glacial abrupt climate changes*. PNAS **119** (2022), e2203468119.

pnas119-e2203468119-Supplement.pdf

Sea ice decline in the North Atlantic and Nordic Seas has been proposed to contribute to the repeated abrupt atmospheric warmings recorded in Greenland ice cores during the last glacial period, known as Dansgaard-Oeschger (D-O) events. However, the understanding of how sea ice changes were coupled with abrupt climate changes during D-O events has remained incomplete due to a lack of suitable high-resolution sea ice proxy records from northwestern North Atlantic regions. Here, we present a subdecadal-scale bromine enrichment (Brenr) record from the NEEM ice core (Northwest Greenland) and sediment core biomarker records to reconstruct the variability of seasonal sea ice in the Baffin Bay and Labrador Sea over a suite of D-O events between 34 and 42 ka. Our Results reveal repeated shifts between stable, multiyear sea ice (MYSI) conditions during cold stadials and unstable, seasonal sea ice conditions during warmer interstadials. The shift from stadial to interstadial sea ice conditions occurred rapidly and synchronously with the atmospheric warming over Greenland, while the amplitude of high-frequency sea ice fluctuations increased through interstadials. Our findings suggest that the

rapid replacement of widespread MYSI with seasonal sea ice amplified the abrupt climate warming over the course of D-O events and highlight the role of feedbacks associated with late-interstadial seasonal sea ice expansion in driving the North Atlantic ocean–climate system back to stadial conditions.

Keywords: sea ice reconstruction | Baffin Bay | Labrador Sea | abrupt climate changes | Dansgaard-Oeschger events

Federico Scoto, Henrik Sadatzki, Niccolò Maffezzoli, Carlo Barbante, Alessandro Gagliardi, Cristiano Varin, Paul Vallelonga, Vasileios Gkinis, Dorthe Dahl-Jensen, Helle Astrid Kjær, François Burgay, Alfonso Saiz-Lopez, Ruediger Stein & Andrea Spolaor

Significance: Dansgaard-Oeschger (D-O) events are abrupt atmospheric warming events in Greenland that occurred repeatedly during the last glacial period. Combining proxy records from an ice core and a sediment core, we reconstruct sea ice conditions in the Baffin Bay and the Labrador Sea during several D-O events between 34 and 42 thousand years ago. Our results reveal in detail that widespread sea ice decline was synchronous with the atmospheric warming of the D-O events, highlighting the importance of sea ice decline in amplifying abrupt high-latitude climate warming. We also find re-expansion of seasonal sea ice during the late phase of warm interstadial periods, which likely contributed to a feedback loop in the sub-polar North Atlantic driving the climate system back to cold stadial conditions.

Metallzeiten

Risch 2020

Roberto Risch, Selina Delgado-Raack & Marina Eguíluz, *Ein Einblick in die wirtschaftliche Macht der Aunjetitzer Fürsten, Die Mahlsteine des Grabhügels Bornhöck*. In: Harald Meller & Michael Schefzik (Hrsg.), *Die Welt der Himmelsscheibe von Nebra – Neue Horizonte, Begleitband zur Sonderausstellung im Landesmuseum für Vorgeschichte Halle (Saale) 4. Juni 2021 Bis 9. Januar 2022*. (Darmstadt 2020), 108–108.

In den meisten Agrargesellschaften der Welt, die auf diese Technologie bis heute angewiesen sind, obliegt das Mahlen den Frauen. Um eine Familie mit den lebensnotwendigen Kohlenhydraten zu versorgen, bedarf diese Arbeit täglich mehrerer Stunden. Das Getreidemahlen gilt damit sicher zurecht als eine der negativsten Folgen der Sesshaftigkeit und des Ackerbaus. Das mag auch erklären, weshalb die Eliten früher Staatsgesellschaften wie in Mesopotamien oder China die Getreideverarbeitung zentralisierten und aus dem häuslichen Milieu auf Gefangene, Sklaven oder unterdrückte Arbeiter verlagerten.

Methoden

Breznau 2022

Nate Breznau, Eike Mark Rinke & Alexander Wuttke et al., *Observing many researchers using the same data and hypothesis reveals a hidden universe of uncertainty*. PNAS **119** (2022), e2203150119.

pnas119-e2203150119-Supplement.pdf

This study explores how researchers' analytical choices affect the reliability of scientific findings. Most discussions of reliability problems in science focus on systematic biases. We broaden the lens to emphasize the idiosyncrasy of conscious

and unconscious decisions that researchers make during data analysis. We coordinated 161 researchers in 73 research teams and observed their research decisions as they used the same data to independently test the same prominent social science hypothesis: that greater immigration reduces support for social policies among the public. In this typical case of social science research, research teams reported both widely diverging numerical findings and substantive conclusions despite identical start conditions. Researchers' expertise, prior beliefs, and expectations barely predict the wide variation in research outcomes. More than 95 % of the total variance in numerical results remains unexplained even after qualitative coding of all identifiable decisions in each team's workflow. This reveals a universe of uncertainty that remains hidden when considering a single study in isolation. The idiosyncratic nature of how researchers' results and conclusions varied is a previously underappreciated explanation for why many scientific hypotheses remain contested. These results call for greater epistemic humility and clarity in reporting scientific findings.

Keywords: metascience | many analysts | researcher degrees of freedom | analytical flexibility | immigration and policy preferences

Significance: Will different researchers converge on similar findings when analyzing the same data? Seventythree independent research teams used identical crosscountry survey data to test a prominent social science hypothesis: that more immigration will reduce public support for government provision of social policies. Instead of convergence, teams' results varied greatly, ranging from large negative to large positive effects of immigration on social policy support. The choices made by the research teams in designing their statistical tests explain very little of this variation; a hidden universe of uncertainty remains. Considering this variation, scientists, especially those working with the complexities of human societies and behavior, should exercise humility and strive to better account for the uncertainty in their work.

Mittelalter

Gesta 1099

Anonymi Gesta Francorum, et aliorum Hierosolymitanorum, mit Erläuterungen herausgegeben von Heinrich Hagenmeyer. (Heidelberg 1890).

Runciman 1951

Steven Runciman, *A History of the Crusades, I: The First Crusade and the Foundation of the Kingdom of Jerusalem.* (London 2016).

Runciman 1952

Steven Runciman, *A History of the Crusades, II: The Kingdom of Jerusalem and the Frankish East 1100–1187.* (London 2016).

Runciman 1954

Steven Runciman, *A History of the Crusades, III: The Kingdom of Acre and the later Crusades.* (London 2016).

Mittelpaläolithikum

Callaway 2022

Ewen Callaway, *First Known Neanderthal Family Found in Siberian Cave*. nature **610** (2022), 615–616.

Ancient DNA from closely related individuals offers fresh insight into Neanderthal social structures.

Neolithikum

Frahm 2022

Ellery Frahm & Christina M. Carolus, *Identifying the origins of obsidian artifacts in the Deh Luran Plain (Southwestern Iran) Highlights community connections in the Neolithic Zagros*. PNAS **119** (2022), e2109321119.

pnas119-e2109321119-Supplement.pdf

Exchange networks created by Neolithic pastoral transhumance have been central to explaining the distant transport of obsidian since chemical analysis was first used to attribute Near Eastern artifacts to their volcanic origins in the 1960s. Since then, critical reassessments of floral, faunal, and chronological data have upended long-held interpretations regarding the emergence of food production and have demonstrated that far-traveled, nomadic pastoralists were more myth than reality, at least during the Neolithic. Despite debates regarding their proposed conveyance mechanisms, obsidian artifacts' transport has received relatively little attention compared with zooarchaeological and archaeobotanical lines of investigation. The rise of nondestructive and portable instruments permits entire obsidian assemblages to be traced to their sources, renewing their significance in elucidating connections among early pastoral and agricultural communities. Here we share our findings about the obsidian artifacts excavated from the sites of Ali Kosh and Chagha Sefid in the southern Zagros. In the 1960s and 1970s, 28 obsidian artifacts from the sites were destructively tested, and the remainder were sorted by color. Our results emphasize a dynamic, accelerating connectivity among the Early and Late Neolithic communities. Here we propose and support an alternative model for obsidian distribution among more settled communities. In brief, diversity in the obsidian assemblage accelerated diachronically, an invisible trend in the earlier studies. Our model of increasing population densities is supported by archaeological data and computational simulations, offering insights regarding the Neolithic Demographic Transition in the Zagros, an equivalent of which is commonly thought to have occurred around the world.

Keywords: Neolithic Revolution | southern Zagros | obsidian sourcing | lithic artifacts | social and technological change

Significance: Early scientific investigations of the Neolithic Near East, such as the excavations of Ali Kosh and Chagha Sefid during the 1960s, were pioneering for their time.Modern, critical reexaminations of these (and other) sites have led to substantially different interpretations. New insights with respect to fauna, flora, and chronology have overturned widely held ideas about the emergence of food production. Chemically determining the geological origins of all lithic artifacts made fromobsidian has hitherto been overlooked. The observed accelerating diversity in these obsidian assemblages indicates intensifying connections among Neolithic sites, highlighting intercommunity contacts as a mechanismfor social change as populations grew during a demographic transition purported to have occurred within foodproducing societies worldwide, from western Europe toMesoamerica.

Politik

Hannikainen 2022

Ivar R. Hannikainen et al., *Coordination and expertise foster legal textualism*. PNAS **119** (2022), e2206531119.

pnas119-e2206531119-Supplement1.pdf, pnas119-e2206531119-Supplement2.txt, pnas119-e2206531119-Supplement3.txt, pnas119-e2206531119-Supplement4.csv, pnas119-e2206531119-Supplement5.csv

A cross-cultural survey experiment revealed a dominant tendency to rely on a rule's letter over its spirit when deciding which behaviors violate the rule. This tendency varied markedly across (k = 15) countries, owing to variation in the impact of moral appraisals on judgments of rule violation. Compared with laypeople, legal experts were more inclined to disregard their moral evaluations of the acts altogether and consequently exhibited stronger textualist tendencies. Finally, we evaluated a plausible mechanism for the emergence of textualism: in a two-player coordination game, incentives to coordinate in the absence of communication reinforced participants' adherence to rules' literal meaning. Together, these studies (total n = 5,794) help clarify the origins and allure of textualism, especially in the law. Within heterogeneous communities in which members diverge in their moral appraisals involving a rule's purpose, the rule's literal meaning provides a clear focal point—an identifiable point of agreement enabling coordinated interpretation among citizens, lawmakers, and judges.

Keywords: moral judgment | legal decision making | coordination | cross-cultural research

Ivar R. Hannikainen, Kevin P. Tobia, Guilherme da F. C. F. de Almeida, Noel Struchiner, Markus Kneer, Piotr Bystranowski, Vilius Dranseika, Niek Strohmaier, Samantha Bensinger, Kristina Dolinina, Bartosz Janik, Eglė Lauraitytė, Michael Laakasuo, Alice Liefgreen, Ivars Neiders, Maciej Próchnicki, Alejandro Rosas, Jukka Sundvall & Tomasz Żuradzki

Significance: The transition from deference to authority to autonomous reasoning is a major landmark in moral development. In this light, it is interesting how citizens and especially legal experts often heed the letter of the law in detriment of their moral standards during judicial decision making. Despite substantial cultural variability in this phenomenon, our study documented a global tendency toward such "textualist" interpretation and provided an explanation for why it might prevail: prioritizing the letter of the law over its spirit helps citizens and judges reach a shared understanding of law's scope, which plausibly brings about longterm social benefits and outweighs the occasional moral cost of adopting a textualist strategy.

Sprachlehre

Jastrow 1903

Marcus Jastrow, *Dictionary, of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic literature with an Index of Scriptural quotations*. (London 1903).

Levy 1864

Moritz Abraham Levy, *Phönizisches Wörterbuch*. (Norderstedt 2016). Nachdruck der Ausgabe von 1864.

Levy 1889
Jacob Levy, *Neuhebräisches und chaldäisches Wörterbuch, über die Talmudim und Midraschim*. (Leipzig 1889).

Story or Book

Miller 2019
Naomi F. Miller, *Paradise lost*. Journal of Peasant Studies **46** (2019), 872–877.

In Against the Grain, James C. Scott's project is to tell those unfamiliar with archaeology about the results of research conducted by anthropologists, archaeologists and others over the past 50 years or so. He Highlights a number of core findings: the hunting-gathering lifestyle can be less onerous than farming; in ancient times it was healthier; and sedentism (i.e. village life) preceded plant cultivation and animal husbandry. To Scott, the state is an inherently oppressive kind of social organization that extracts resources from many for the benefit of a few; the state's control of production and reproduction can be seen as a kind of domestication of people. The first farmers in the Near East unwittingly set this system in motion, and after the appearance of the first states (4000–2000 BCE), the non-state peoples living at their borders were variously predator or prey, enslaving or being enslaved by state actors.

A book written in a polemical style evokes a strong response. Although I cannot speak to Scott's intent, the message I received is that resistance is futile. If there has been no change in the essence of 'the state' for the past 6000 years, and the only change has been to its reach, what hope is there for political change today? Without denying that state oppression exists, I reject the implication that all states are equally oppressive. Therefore, I still think it important for individuals and coalitions to keep working toward a more just world.