

References

Afrika

BALLARINI 2009

Roberto Ballarini, *The Perfect Form, On the track of African tribal currency*. (Milano 2009).

FAUVELLE 2013

François-Xavier Fauvelle, *Le rhinocéros d'or, Histoires du Moyen Âge africain*. folio histoire 239 (Malesherbes 2017).

Aktuell

BURKE 2018

Marshall Burke, Felipe González, Patrick Baylis, Sam Heft-Neal, Ceren Baysan, Sanjay Basu & Solomon Hsiang, *Higher temperatures increase suicide rates in the United States and Mexico*. [nature climate change 8 \(2018\), 723–729](#).

[NatClimCh08-723-Supplement.pdf](#)

Linkages between climate and mental health are often theorized but remain poorly quantified. In particular, it is unknown whether the rate of suicide, a leading cause of death globally, is systematically affected by climatic conditions. Using comprehensive data from multiple decades for both the United States and Mexico, we find that suicide rates rise 0.7% in US counties and 2.1% in Mexican municipalities for a 1 °C increase in monthly average temperature. This effect is similar in hotter versus cooler regions and has not diminished over time, indicating limited historical adaptation. Analysis of depressive language in > 600 million social media updates further suggests that mental well-being deteriorates during warmer periods. We project that unmitigated climate change (RCP8.5) could result in a combined 9–40 thousand additional suicides (95% confidence interval) across the United States and Mexico by 2050, representing a change in suicide rates comparable to the estimated impact of economic recessions, suicide prevention programmes or gun restriction laws.

COLLINS 2018

Seán Collins, Paul Deane, Brian O’Gallachóir, Stefan Pfenninger & Iain Staffell, *Impacts of Inter-annual Wind and Solar Variations on the European Power System*. [Joule \(2018\), preprint, 1–32](#). DOI:10.1016/j.joule.2018.06.020.

Weather-dependent renewable energy resources are playing a key role in decarbonizing electricity. There is a growing body of analysis on the impacts of wind and solar variability on power system operation. Existing studies tend to use a single or typical year of generation data, which overlooks the substantial year-to-year fluctuation in weather, or to only consider variation in the meteorological inputs, which overlooks the complex response of an interconnected power system. Here, we address these gaps by combining detailed continent-wide modeling of

Europe's future power system with 30 years of historical weather data. The most representative single years are 1989 and 2012, but using multiple years reveals a 5-fold increase in Europe's inter-annual variability of CO₂ emissions and total generation costs from 2015 to 2030. We also find that several metrics generalize to linear functions of variable renewable penetration: CO₂ emissions, curtailment of renewables, wholesale prices, and total system costs.

Highlights:

The impact of weather patterns on power system increases with decarbonization.

Europe's CO₂ output and generation cost variability could increase 5-fold by 2030.

Several metrics can be reasonably approximated from the level VRE penetration.

The most representative single years for renewable generation are 1989 and 2012.

Context & Scale

Wind and solar power have been driving the decarbonization of Europe's electricity over the last decade. Increasing our reliance on weather-dependent resources makes it imperative that planning of electricity systems becomes cognizant of their long-term variability. Studies often neglect the long-term variability of these resources by using only data from a single or a few years or fail to account for the impacts of short-term international electricity flows and limitations on generator flexibility, which are critical to the integration of these variable generation sources.

This study uses a continental electricity system model and 30 years of hourly wind and solar data to determine the impact of long-term weather patterns on European electricity system operation and how this varies with decarbonization ambition. The results show that the variability of CO₂ emissions and total generation costs for this interconnected electricity system could increase 5-fold by 2030 compared with 2015.

Anthropologie Klima

CALEY 2018

Thibaut Caley et al., *A two-million-year-long hydroclimatic context for hominin evolution in southeastern Africa*. *nature* **560** (2018), 76–79.

Thibaut Caley, Thomas Extier, James A. Collins, Enno Schefuß, Lydie Dupont, Bruno Malaizé, Linda Rossignol, Antoine Souron, Erin L. Mcclymont, Francisco J. Jimenez-Espejo, Carmen García-Comas, Frédérique Eynaud, Philippe Martinez, Didier M. Roche, Stephan J. Jorry, Karine Charlier, Mélanie Wary, Pierre-Yves Gourves, Isabelle Billy & Jacques Giraudeau

The past two million years of eastern African climate variability is currently poorly constrained, despite interest in understanding its assumed role in early human evolution^{1–4}. Rare palaeoclimate records from northeastern Africa suggest progressively drier conditions^{2,5} or a stable hydroclimate⁶. By contrast, records from Lake Malawi in tropical southeastern Africa reveal a trend of a progressively wetter climate over the past 1.3 million years^{7,8}. The climatic forcings that controlled these past hydrological changes are also a matter of debate. Some studies suggest a dominant local insolation forcing on hydrological changes^{9–11}, whereas others infer a potential influence of sea surface temperature changes in the Indian Ocean^{8,12,13}. Here we show that the hydroclimate in southeastern Africa (20–25° S) is controlled by interplay between low-latitude insolation forcing (precession and eccentricity) and changes in ice volume at high latitudes. Our results are based on a multiple-proxy reconstruction of hydrological changes in the Limpopo River catchment, combined with a reconstruction of sea surface temperature in the southwestern Indian Ocean for the past 2.14 million years. We find a long-term aridification in the Limpopo catchment between around 1 and 0.6 million years ago,

opposite to the hydroclimatic evolution suggested by records from Lake Malawi. Our results, together with evidence of wetting at Lake Malawi, imply that the rainbelt contracted toward the Equator in response to increased ice volume at high latitudes. By reducing the extent of woodland or wetlands in terrestrial ecosystems, the observed changes in the hydroclimate of southeastern Africa—both in terms of its long-term state and marked precessional variability—could have had a role in the evolution of early hominins, particularly in the extinction of *Paranthropus robustus*.

Bibel

BARKER 2018

JAMES W. BARKER, ANTHONY LE DONNE & JOEL N. LOHR (Hrsg.), *Found in Translation, Essays on Jewish Biblical Translation in Honor of Leonard J. Greenspoon*. (West Lafayette 2018).

Found in Translation is at once a themed volume on the translation of ancient Jewish texts and a Festschrift for Leonard J. Greenspoon, the Philip M. and Ethel Klutznick Professor in Jewish Civilization and professor of classical and near Eastern studies and of theology at Creighton University in Omaha, Nebraska. Greenspoon has made significant contributions to the study of Jewish biblical translations, particularly the ancient translation of the Hebrew Bible into Greek, known as the Septuagint. This volume comprises an internationally renowned group of scholars presenting a wide range of original essays on Bible translation, the influence of culture on biblical translation, Bible translations' reciprocal influence on culture, and the translation of various Jewish texts and collections, especially the Septuagint. Volume editors have painstakingly planned *Found in Translation* to have the broadest scope of any current work on Jewish biblical translation to reflect Greenspoon's broad impact on the field throughout an august career.

BIBLICAL ARCHAEOLOGY 1985

ISRAEL EXPLORATION SOCIETY (Hrsg.), *Biblical Archaeology Today, Proceedings of the International Congress on Biblical Archaeology, Jerusalem, April 1984*. (Jerusalem 1985).

FREEDMAN 1961

David Noel Freedman, *The Chronicler's Purpose*. *Catholic Biblical Quarterly* **23** (1961), 436–442.

We may suggest that the reason for the addition of the records of Ezra and Nehemiah to the Chronicler's work was twofold: to bring the earlier work up to date, and to adapt it to the changed circumstances of the 5th century community. Ezra and Nehemiah oriented the community in accordance with the presumed pattern established by Moses in the wilderness, as over against the Chronicler whose model was derived from the monarchy established by David in the promised land.

Both political and religious factors were involved, and the concern for legitimacy was paramount, but the differences in presuppositions, in method, and objectives between the original Chronicler and his successor are significant. Above all, the Chronicler was a monarchist, while the other was a clericist, i.e., a scribe.

GOSHEN-GOTTSTEIN 1967

M. H. Goshen-Gottstein, *Hebrew Biblical Manuscripts, Their History and Their Place in the HUBP Edition*. *Biblica* **48** (1967), 243–290.

GREENSTEIN 2018

Edward L. Greenstein, *Challenges in Translating the Book of Job*. In: JAMES W. BARKER, ANTHONY LE DONNE & JOEL N. LOHR (Hrsg.), *Found in Translation, Essays on Jewish Biblical Translation in Honor of Leonard J. Greenspoon*. (West Lafayette 2018), 179–199.

One can hardly expect such a wealth of meanings to be conveyed by any choice of words in the target language. Translation, it has been said, is an art of failure. Nevertheless, it behooves the translator not only to come to grips with the strangeness or oddity of a source's formulation but also to convey it to the reader, who will in turn be challenged to come to grips with a startling expression and manner of thought. In the case of Job, the reader of the original is hardly less challenged than the translator. In my own experience, the effort of translating [Job] has made me a very much better reader of the book.

HURVITZ 1974

Avi Hurvitz, *The Evidence of Language in Dating the Priestly Code, A Linguistic Study in Technical Idioms and Terminology*. *Revue Biblique* 81 (1974), 24–56.

Biblical scholars must, when giving their final verdict on the dating of P, take into account all the available material—including linguistic data. The present study is an attempt to cast light on this data, which so far has not, we believe, won the attention it deserves.

NA'AMAN 2008

Nadav Na'aman & Nurit Lissovsky, *Kuntillet 'Ajrud, sacred trees and the Asherah*. *Tel Aviv: Archaeology* 35 (2008), 186–208.

The point of departure for the article is the contrast between the abundance of unique artefacts, religious inscriptions and drawings unearthed at Kuntillet Ajrud and the absence of remains associated with cultic activity at the site. It is proposed that this discrepancy in the finding may be accounted for by a tradition of a sacred tree and a cult site around it. The discussion first explores the importance of the cult of sacred trees in the history of the Levant. Several ancient Levantine cult sites developed around prominent trees that drew sanctity to their vicinity. In this light, it is conjectured that at the site of Kuntillet Ajrud the actual cultic activity took place around a sacred tree (or sacred grove) and a nearby altar, while the main building served as a storehouse for the sancta of the goddess Asherata, her dedications and treasures. Such a building could also have served as an inn for pilgrims travelling along the Darb el-Ghazza, but its function as a caravanserai was secondary to its main purpose as the goddess' treasury.

ROSENBAUM 1979

Jonathan Rosenbaum, *Hezekiah's Reform and the Deuteronomistic Tradition*. *Harvard Theological Review* 72 (1979), 23–43.

The final question remains: why did the Chronicler decide to include the facts about Hezekiah's reform in his post-Exilic work? The answer now seems evident: The tragic death of Josiah and the Exile of Judah made Dtr's sensitivities irrelevant and probably incomprehensible to the Chronicler. There was no thunder left to steal! The original material concerning Hezekiah's reform did, however, constitute part of the Chronicler's primary sources. Thus, the Chronicler included this material, since it was historical and since it added support to his own literary goals.

As we have seen, those goals included a defense of Davidic political claims, support of a royal restoration under Zerubbabel, and the demonstration of post-Exilic royal continuity. Historically accurate evidence supporting the profound religious commitment of a Davidic heir like Hezekiah could have only strengthened Davidic claims in the Exile and thereby advanced the Chronicler's purposes.

Judentum

AUNE 1991

D. E. Aune, *On the Origins of the "Council of Javneh" Myth*. *Journal of Biblical Literature* **110** (1991), 491–493.

LEWIS 1964

Jack P. Lewis, *What Do We Mean by Jabneh?* *Journal of Bible and Religion* **32** (1964), 125–132.

From these phenomena, it would appear that the frequently made assertion that a binding decision was made at Jabneh covering all scripture is conjectural at best. The current certainty on the matter appears to be one of those things that has come to be true due to frequent repetition of the assertion rather than to its being actually supported by the evidence. In the absence of evidence, it would be sounder scholarship to admit ignorance and to allow the question to remain as vague as the sources are. We can say that certain books came before the gathering at Jabneh; that debate continued after that time; and that opinion about the extent of the canon crystallized in the Tannaitic period. Beyond this, we cannot be certain.

MAIMONIDES 1186

Moses Maimonides, *The Guide for the Perplexed, Translated from the original Arabic text by M. Friedländer Ph.D. (New York 41904)*.

Klima

DÜRING 2016

Bleda S. Düring, *The 8.2 Event and the Neolithic Expansion in Western Anatolia*. In: PETER F. BIEHL & OLIVIER P. NIEUWENHUYSE (Hrsg.), *Climate and cultural change in prehistoric Europe and the Near East*. IEMA proceedings 6 (Albany 2016), 135–150.

Over the past few years the claim that the 8.2 event triggered the expansion of farming toward Europe has been put forward by various archaeologists and climate researchers. Paradoxically, the archaeological evidence from western Anatolia, a region of key significance in this Neolithic expansion episode, has not featured prominently in these hypotheses. This neglect may partly stem from the circumstances that relevant data, mostly published exclusively in Turkish, have only become available in recent years. Here, new data from western Asia Minor, in particular the Lake District, Aegean Anatolia, and the Marmara Region, will be considered.

It will further be argued that synchronicity in ecology and archaeology has often been erroneously equated with causality, and that synchronicity in itself does not prove anything. Instead, it is necessary to reconstruct ecological changes in particular regions and to explain why particular developments in the archaeological

sequence would have been related to ecological changes, rather than other factors. In order to evaluate the role of the 8.2 event in relation to the Neolithic expansion, I will discuss the chronology of the Neolithic expansion that occurred in Asia Minor during the seventh millennium, proxy records of ecological changes, and, finally, the archaeology of the early Neolithic in western Turkey and what that can tell us about the mechanisms that made this expansion possible. On this basis we can evaluate whether or not the 8.2 event might have played a significant role in this particular Neolithic expansion episode.

WETTER 2014

Oliver Wetter et al., *The year-long unprecedented European heat and drought of 1540, A worst case*. *Climatic Change* **125** (2014), 349–363.

ClimChange125-349-Supplement.pdf

Oliver Wetter, Christian Pfister, Johannes P. Werner, Eduardo Zorita, Sebastian Wagner, Sonia I. Seneviratne, Jürgen Herget, Uwe Grünewald, Jürg Luterbacher, Maria-Joao Alcoforado, Mariano Barriendos, Ursula Bieber, Rudolf Brázdil, Karl H. Burmeister, Chantal Camenisch, Antonio Contino, Petr Dobrovolný, Rüdiger Glaser, Iso Himmelsbach, Andrea Kiss, Oldřich Kotyza, Thomas Labbé, Danuta Limanówka, Laurent Litzenburger, Oyvind Nordl, Kathleen Pribyl, Dag Retsö, Dirk Riemann, Christian Rohr, Werner Siegfried, Johan Söderberg & Jean-Laurent Spring

The heat waves of 2003 in Western Europe and 2010 in Russia, commonly labelled as rare climatic anomalies outside of previous experience, are often taken as harbingers of more frequent extremes in the global warming-influenced future. However, a recent reconstruction of spring–summer temperatures for WE resulted in the likelihood of significantly higher temperatures in 1540. In order to check the plausibility of this result we investigated the severity of the 1540 drought by putting forward the argument of the known soil desiccation-temperature feedback. Based on more than 300 first-hand documentary weather report sources originating from an area of 2 to 3 million km², we show that Europe was affected by an unprecedented 11-month-long Megadrought. The estimated number of precipitation days and precipitation amount for Central and Western Europe in 1540 is significantly lower than the 100-year minima of the instrumental measurement period for spring, summer and autumn. This result is supported by independent documentary evidence about extremely low river flows and Europe-wide wild-, forest and settlement fires. We found that an event of this severity cannot be simulated by state-of-the-art climate models.

Kultur Biologie Anthropologie

BELSKY 2018

Daniel W. Belsky et al., *Genetic analysis of social-class mobility in five longitudinal studies*. *PNAS* **115** (2018), E7275–E7284.

pnas115-E07275-Supplement.pdf

Daniel W. Belsky, Benjamin W. Domingue, Robbee Wedow, Louise Arseneault, Jason D. Boardman, Avshalom Caspi, Dalton Conley, Jason M. Fletcher, Jeremy Freese, Pamela Herd, Terrie E. Moffitt, Richie Poulton, Kamil Sicinski, Jasmin Wertz & Kathleen Mullan Harris

A summary genetic measure, called a “polygenic score,” derived from a genome-wide association study (GWAS) of education can modestly predict a person’s educational and economic success. This prediction could signal a biological mechanism: Education-linked genetics could encode characteristics that help people get ahead

in life. Alternatively, prediction could reflect social history: People from well-off families might stay well-off for social reasons, and these families might also look alike genetically. A key test to distinguish biological mechanism from social history is if people with higher education polygenic scores tend to climb the social ladder beyond their parents' position. Upward mobility would indicate education-linked genetics encodes characteristics that foster success. We tested if education-linked polygenic scores predicted social mobility in >20,000 individuals in five longitudinal studies in the United States, Britain, and New Zealand. Participants with higher polygenic scores achieved more education and career success and accumulated more wealth. However, they also tended to come from better-off families. In the key test, participants with higher polygenic scores tended to be upwardly mobile compared with their parents. Moreover, in sibling-difference analysis, the sibling with the higher polygenic score was more upwardly mobile. Thus, education GWAS discoveries are not mere correlates of privilege; they influence social mobility within a life. Additional analyses revealed that a mother's polygenic score predicted her child's attainment over and above the child's own polygenic score, suggesting parents' genetics can also affect their children's attainment through environmental pathways. Education GWAS discoveries affect socioeconomic attainment through influence on individuals' family-of-origin environments and their social mobility.

Keywords: genetics | social class | social mobility | sociogenomics | polygenic score

Significance: Genome-wide association study (GWAS) discoveries about educational attainment have raised questions about the meaning of the genetics of success. These discoveries could offer clues about biological mechanisms or, because children inherit genetics and social class from parents, education-linked genetics could be spurious correlates of socially transmitted advantages. To distinguish between these hypotheses, we studied social mobility in five cohorts from three countries. We found that people with more education-linked genetics were more successful compared with parents and siblings. We also found mothers' education-linked genetics predicted their children's attainment over and above the children's own genetics, indicating an environmentally mediated genetic effect. Findings reject pure social-transmission explanations of education GWAS discoveries. Instead, genetics influences attainment directly through social mobility and indirectly through family environments.

Mesolithikum

ARRANZ-OTAEGUI 2018

Amaia Arranz-Otaegui, Lara Gonzalez Carretero, Monica N. Ramsey, Dorian Q. Fuller & Tobias Richter, *Archaeobotanical evidence reveals the origins of bread 14,400 years ago in northeastern Jordan*. [PNAS 115 \(2018\), 7925–7930](#).

[pnas115-07925-Supplement.pdf](#)

The origins of bread have long been associated with the emergence of agriculture and cereal domestication during the Neolithic in southwest Asia. In this study we analyze a total of 24 charred food remains from Shubayqa 1, a Natufian hunter-gatherer site located in northeastern Jordan and dated to 14.6–11.6 ka cal BP. Our finds provide empirical data to demonstrate that the preparation and consumption of bread-like products predated the emergence of agriculture by at least 4,000 years. The interdisciplinary analyses indicate the use of some of the “founder crops” of southwest Asian agriculture (e.g., *Triticum boeoticum*, wild einkorn) and

root foods (e.g., *Bolboschoenus glaucus*, club-rush tubers) to produce flat bread-like products. The available archaeobotanical evidence for the Natufian period indicates that cereal exploitation was not common during this time, and it is most likely that cereal-based meals like bread become staples only when agriculture was firmly established.

Keywords: southwest Asia | Epipaleolithic | hunter-gatherer | food | archaeobotany

Significance: Despite being one of the most important foodstuffs consumed in the modern world, the origins of bread are still largely unknown. Here we report the earliest empirical evidence for the preparation of bread-like products by Natufian hunter-gatherers, 4,000 years before the emergence of the Neolithic agricultural way of life. The discovery of charred food remains has allowed for the reconstruction of the chaîne opératoire for the early production of bread-like products. Our results suggest the use of the wild ancestors of domesticated cereals (e.g. wild einkorn) and club-rush tubers to produce flat bread-like products. Cereal-based meals such as bread probably become staples when Neolithic farmers started to rely on the cultivation of domesticated cereal species for their subsistence.

LUCQUIN 2018

Alexandre Lucquin et al., *The impact of environmental change on the use of early pottery by East Asian hunter-gatherers*. [PNAS 115 \(2018\), 7931–7936](#).

[pnas115-07931-Supplement.pdf](#)

Alexandre Lucquin, Harry K. Robson, Yvette Eley, Shinya Shoda, Dessislava Veltcheva, Kevin Gibbs, Carl P. Heron, Sven Isaksson, Yastami Nishida, Yasuhiro Taniguchi, Shota Nakajima, Kenichi Kobayashi, Peter Jordan, Simon Kaner & Oliver E. Craig

The invention of pottery was a fundamental technological advancement with far-reaching economic and cultural consequences. Pottery containers first emerged in East Asia during the Late Pleistocene in a wide range of environmental settings, but became particularly prominent and much more widely dispersed after climatic warming at the start of the Holocene. Some archaeologists argue that this increasing usage was driven by environmental factors, as warmer climates would have generated a wider range of terrestrial plant and animal resources that required processing in pottery. However, this hypothesis has never been directly tested. Here, in one of the largest studies of its kind, we conducted organic residue analysis of >800 pottery vessels selected from 46 Late Pleistocene and Early Holocene sites located across the Japanese archipelago to identify their contents. Our results demonstrate that pottery had a strong association with the processing of aquatic resources, irrespective of the ecological setting. Contrary to expectations, this association remained stable even after the onset of Holocene warming, including in more southerly areas, where expanding forests provided new opportunities for hunting and gathering. Nevertheless, the results indicate that a broader array of aquatic resources was processed in pottery after the start of the Holocene. We suggest this marks a significant change in the role of pottery of hunter-gatherers, corresponding to an increased volume of production, greater variation in forms and sizes, the rise of intensified fishing, the onset of shellfish exploitation, and reduced residential mobility.

Keywords: archaeology | early pottery | organic residue analysis | stable isotopes | Jomon

Significance: The motivations for the widespread adoption of pottery is a key theme in world prehistory and is often linked to climate warming at the start of the Holocene. Through organic residue analysis, we investigated the contents of

>800 ceramic samples from across the Japanese archipelago, a unique assemblage that transcends the Pleistocene–Holocene boundary. Against our expectations, we found that pottery use did not fundamentally change in the Early Holocene. Instead, aquatic resources dominated in both periods regardless of the environmental setting. Nevertheless, we found that a broader range of aquatic foods was processed in Early Holocene vessels, corresponding to increased ceramic production, reduced mobility, intensified fishing, and the start of significant shellfish gathering at this time.

Metallzeiten

EASTON 2018

Donald Easton & Bernhard Weninger, *A possible new Bronze Age period at Troy*. [Anatolian Studies 68 \(2018\), 33–73](#).

[AnatolStud68-033-Supplement.pdf](#)

Statistical analysis of Carl Blegen’s pottery sequence using Correspondence Analysis (CA) suggests a gap of 100–200 years between his Troy III and IV periods. From the Manfred Korfmann excavations three stratigraphic sequences hitherto assigned to Troy IV and V appear to bridge it. This allocation is based on stratigraphic/architectural grounds and on the observable development in ceramic shapes and wares. Heinrich Schliemann’s pottery sequence from 1870–1873 is also analysed by CA and found to compare well with Blegen’s (with limited exceptions probably due to the larger scope of his excavations), but it does not exhibit the same gap. This suggests that during the ‘bridge’ period occupation shrank to the summit on the western end of the citadel mound. This ‘bridge’ period of seven or more building phases has a distinctive ceramic assemblage and may be called the Proto-IV period. It is broadly contemporary with Middle Helladic I, Beycesultan VIII–VI, Küllioba II and the Tarsus Early Bronze to Middle Bronze transitional period. Careful re-evaluation of the radiocarbon evidence dates it to ca 2150–1990 cal. BC. Botanical and faunal evidence from the strata in question attests significantly drier climatic conditions which, together with the smaller size of the settlement, probably reflect the 4.2ka cal. BP climatic deterioration.