

## References

### Aktuell

#### CANDIDO 2020

Darlan S. Candido et al., *Evolution and epidemic spread of SARS-CoV-2 in Brazil.* *science* **369** (2020), 1255–1260.

[DOI:10.1126/science.abd2161](https://doi.org/10.1126/science.abd2161).

[s369-1255-Supplement.pdf](#)

Brazil currently has one of the fastest-growing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemics in the world. Because of limited available data, assessments of the impact of nonpharmaceutical interventions (NPIs) on this virus spread remain challenging. Using a mobility-driven transmission model, we show that NPIs reduced the reproduction number from  $>3$  to 1 to 1.6 in São Paulo and Rio de Janeiro. Sequencing of 427 new genomes and analysis of a geographically representative genomic dataset identified  $>100$  international virus introductions in Brazil. We estimate that most (76 %) of the Brazilian strains fell in three clades that were introduced from Europe between 22 February and 11 March 2020. During the early epidemic phase, we found that SARS-CoV-2 spread mostly locally and within state borders. After this period, despite sharp decreases in air travel, we estimated multiple exportations from large urban centers that coincided with a 25 % increase in average traveled distances in national flights. This study sheds new light on the epidemic transmission and evolutionary trajectories of SARS-CoV-2 lineages in Brazil and provides evidence that current interventions remain insufficient to keep virus transmission under control in this country.

Darlan S. Candido, Ingra M. Claro, Jaqueline G. de Jesus, William M. Souza, Filipe R. R. Moreira, Simon Dellicour, Thomas A. Mellan, Louis du Plessis, Rafael H. M. Pereira, Flavia C. S. Sales, Erika R. Manuli, Julien Thézé, Luiz Almeida, Mariane T. Menezes, Carolina M. Voloch, Marcilio J. Fumagalli, Thaís M. Coletti, Camila A. M. da Silva, Mariana S. Ramundo, Mariene R. Amorim, Henrique H. Hoeltgebaum, Swapnil Mishra, Mandev S. Gill, Luiz M. Carvalho, Lewis F. Buss, Carlos A. Prete Jr., Jordan Ashworth, Helder I. Nakaya, Pedro S. Peixoto, Oliver J. Brady, Samuel M. Nicholls, Amilcar Tanuri, Átila D. Rossi, Carlos K. V. Braga, Alexandra L. Gerber, Ana Paula de C. Guimarães, Nelson Gaburo Jr., Cecila Salette Alencar, Alessandro C. S. Ferreira, Cristiano X. Lima, José Eduardo Levi, Celso Granato, Giulia M. Ferreira, Ronaldo S. Francisco Jr., Fabiana Granja, Marcia T. Garcia, Maria Luiza Moretti, Mauricio W. Perroud Jr., Terezinha M. P. P. Castiñeiras, Carolina S. Lazari, Sarah C. Hill, Andreza Aruska de Souza Santos, Camila L. Simeoni, Julia Forato, Andrei C. Sposito, Angelica Z. Schreiber, Magnun N. N. Santos, Camila Zolini de Sá, Renan P. Souza, Luciana C. Resende-Moreira, Mauro M. Teixeira, Josy Hubner, Patricia A. F. Leme, Rennan G. Moreira, Maurício L. Nogueira, Brazil-U. K. Centre for Arbovirus Discover, Diagnosi, Genomics & Epidemiology Genomic Networ, Neil M. Ferguson, Silvia F. Costa, José Luiz Proenca-Modena, Ana Tereza R. Vasconcelos, Samir Bhatt, Philippe Lemey, Chieh-Hsi Wu, Andrew Rambaut, Nick J. Loman, Renato S. Aguiar, Oliver G. Pybus, Ester C. Sabino, Nuno Rodrigues Faria

#### HAMER 2020

Mark Hamer, Catharine R. Gale, Mika Kivimki & G. David Batty,

*Overweight, obesity, and risk of hospitalization for COVID-19, A community-based cohort study of adults in the United Kingdom.* [PNAS 117 \(2020\), 21011–21013. DOI:10.1073/pnas.2011086117.](#)

The role of obesity and overweight in occurrence of COVID-19 is unknown. We conducted a large-scale general population study using data from a community-dwelling sample in England ( $n = 334,329$ ;  $56.4 \pm 8.1$  y; 54.5% women) with prospective linkage to national registry on hospitalization for COVID-19. Body mass index (BMI, from measured height and weight) was used as an indicator of overall obesity, and waist-hip ratio for central obesity. Main outcome was cases of COVID-19 serious enough to warrant a hospital admission from 16 March 2020 to 26 April 2020. Around 0.2% ( $n = 640$ ) of the sample were hospitalized for COVID-19. There was an upward linear trend in the likelihood of COVID-19 hospitalization with increasing BMI, that was evident in the overweight (odds ratio, 1.39; 95% CI 1.13 to 1.71; crude incidence 19.1 per 10,000) and obese stage I (1.70; 1.34 to 2.16; 23.3 per 10,000) and stage II (3.38; 2.60 to 4.40; 42.7 per 10,000) compared to normal weight (12.5 per 10,000). This gradient was little affected after adjustment for a wide range of covariates; however, controlling for biomarkers, particularly high-density lipoprotein cholesterol and glycated hemoglobin, led to a greater degree of attenuation. A similar pattern of association emerged for waist-hip ratio. In Summary, overall and central obesity are risk factors for COVID-19 hospital admission. Elevated risk was apparent even at modest weight gain. The mechanisms may involve impaired glucose and lipid metabolism.

Keywords: infection | obesity | COVID-19 | epidemiology

## KUPFERSCHMIDT 2020

Kai Kupferschmidt, *Can Europe tame the pandemic's next wave? Countries seek new strategies as coronavirus cases are rising again across the continent.* [science 369 \(2020\), 1151–1152. DOI:10.1126/science.369.6508.1151.](#)

But the increase shows that Europe relaxed measures too early and too much, says virologist Ab Osterhaus of the University of Veterinary Medicine in Hanover, Germany. “The wrong message was given, basically: We have done a great job and now we can relax again.” Instead, Europe could have tried to emulate New Zealand by stopping community transmission completely and zealously guarding against reintroductions, says Devi Sridhar, a global health expert at the University of Edinburgh who has been advising the Scottish government. Scotland committed early on to pushing case numbers down to zero, but other countries did not, and now almost all are seeing a resurgence.

## SEBHATU 2020

Abiel Sebhata, Karl Wennberg, Stefan Arora-Jonsson & Staffan I. Lindberg, *Explaining the homogeneous diffusion of COVID-19 nonpharmaceutical interventions across heterogeneous countries.* [PNAS 117 \(2020\), 21201–21208. DOI:10.1073/pnas.2010625117.](#)

[pnas117-21201-Supplement.pdf](#)

We analyze the adoption of nonpharmaceutical interventions in the Organisation for Economic Co-operation and Development (OECD) countries during the early phase of the coronavirus disease 2019 (COVID-19) pandemic. Given the complexity associated with pandemic decisions, governments are faced with the dilemma of how to act quickly when their core decision-making processes are based on deliberations balancing political considerations. Our findings show that, in times of severe crisis, governments follow the lead of others and base their decisions on what other

countries do. Governments in countries with a stronger democratic structure are slower to react in the face of the pandemic but are more sensitive to the influence of other countries. We provide insights for research on international policy diffusion and research on the political consequences of the COVID-19 pandemic.

Keywords: COVID-19 pandemic | policy diffusion | democracy

Significance: We investigate what drives OECD countries to adopt COVID-19 restrictive policies such as lockdowns and school closures, and find that government policies are strongly driven by the policies initiated in other countries. The level of democracy also matters: While strong democracies are slower to initiate restrictive policies, they are more likely to follow the policies of nearby countries. Following the lead of others rather than making decisions based on the specific situation of the country may have led to countries locking down either too early or too late. Conversely, if countries follow each other when easing restrictive policies or reinitiate such policies, there may be a situation where countries adopt epidemiologically suboptimal policies.

## SHAW 2020

Vivien Shaw, Rui Diogo & Isabelle Catherine Winder, *Hiding in Plain Sight-ancient Chinese anatomy*. [AnatRec \(2020\)](#), preprint, 1–14. DOI:10.1002/ar.24503.

For thousands of years, scientists have studied human anatomy by dissecting bodies. Our knowledge of their findings is limited, however, both by the subsequent loss of many of the oldest texts, and by a tendency toward a Eurocentric perspective in medicine. As a discipline, anatomy tends to be much more familiar with ancient Greek texts than with those from India, China, or Persia. Here, we show that the Mawangdui medical texts, entombed in the Mawangdui burial site in Changsha, China 168 BCE, are the oldest surviving anatomical atlas in the world. These medical texts both predate and inform the later acupuncture texts which have been the foundation for acupuncture practice in the subsequent two millennia. The skills necessary to interpret them are diverse, requiring the researcher firstly to read the original Chinese, and secondly to perform the anatomical investigations that allow a re-viewing of the structures that the texts refer to. Acupuncture meridians are considered to be esoteric in nature, but these texts are clearly descriptions of the physical body. As such, they represent a previously hidden chapter in the history of anatomy, and a new perspective on acupuncture.

Keywords: acupuncture | anatomical atlas | anatomy | Han era | meridian

## VIGLIONE 2020

Giuliana Viglione, *The True Toll of the Pandemic*. [nature 585 \(2020\)](#), 22–24. .

Mortality statistics are essential for understanding the pandemic. But they fall short in a few ways.

## Anthropologie

## BURGER 2020

Joachim Burger et al., *Low Prevalence of Lactase Persistence in Bronze Age Europe Indicates Ongoing Strong Selection over the Last 3,000 Years*. [Current Biology \(2020\)](#), preprint, 1–9. DOI:10.1016/j.cub.2020.08.033.

Highlights:

- Genomic data from Tollense, the oldest large-scale conflict site north of the Alps
- Novel method indicates that Bronze Age warriors represent an unstructured population
- Lactase persistence frequency in Tollense (7.1%) is significantly lower than today
- Selection coefficient estimate of 6% over the last 3,000 years

In Brief:

Burger et al. report the first genomic data from the oldest known battlefield north of the Alps. With additional data from 55 individuals from sites in Southern and Eastern Europe dating to the Bronze Age, they find evidence for a strong and ongoing selection on lactase persistence in various parts of Europe over the last 3,000 years.

Lactase persistence (LP), the continued expression of lactase into adulthood, is the most strongly selected single gene trait over the last 10,000 years in multiple human populations. It has been posited that the primary allele causing LP among Eurasians, rs4988235-A [1], only rose to appreciable frequencies during the Bronze and Iron Ages [2, 3], long after humans started consuming milk from domesticated animals. This rapid rise has been attributed to an influx of people from the Pontic-Caspian steppe that began around 5,000 years ago [4, 5]. We investigate the spatiotemporal spread of LP through an analysis of 14 warriors from the Tollense Bronze Age battlefield in northern Germany (.3,200 before present, BP), the oldest large-scale conflict site north of the Alps. Genetic data indicate that these individuals represent a single unstructured Central/Northern European population. We complemented these data with genotypes of 18 individuals from the Bronze Age site Mokrin in Serbia (.4,100 to .3,700 BP) and 37 individuals from Eastern Europe and the Pontic-Caspian Steppe region, predating both Bronze Age sites (.5,980 to .3,980 BP). We infer low LP in all three regions, i.e., in northern Germany and South-eastern and Eastern Europe, suggesting that the surge of rs4988235 in Central and Northern Europe was unlikely caused by Steppe expansions. We estimate a selection coefficient of 0.06 and conclude that the selection was ongoing in various parts of Europe over the last 3,000 years.

Joachim Burger, Vivian Link, Jens Blöcher, Anna Schulz, Christian Sell, Zoé Pochon, Yoan Diekmann, Aleksandra Žegarac, Zuzana Hofmanová, Laura Winkelbach, Carlos S. Reyna-Blanco, Vanessa Bieker, Jörg Orschiedt, Ute Brinker, Amelie Scheu, Christoph Leuenberger, Thomas S. Bertino, Ruth Bollongino, Gundula Lidke, Sofija Stefanović, Detlef Jantzen, Elke Kaiser, Thomas Terberger, Mark G. Thomas, Krishna R. Veeramah & Daniel Wegmann

## Bibel

GARFINKEL 2013

Yosef Garfinkel & Madeleine Mumcuoglu, *Triglyphs and Recessed Doorframes on a Building Model from Khirbet Qeiyafa, New Light on Two Technical Terms in the Biblical Descriptions of Solomon's Palace and Temple*. *Israel Exploration Journal* **63** (2013), 135–163.

A unique building model from the early tenth century BCE, excavated at Khirbet Qeiyafa, Israel, presents new data on royal construction in the days of David and Solomon. A combination of triglyphs and a recessed doorframe appears on the model façade. This indicates that aspects of royal architecture typical of the Iron Age Levant, known archaeologically from the ninth–seventh centuries BCE, developed 150 years earlier than previously thought and suggests a Near Eastern origin for the triglyph of classical Greek architecture. The model serves as the

basis for identifying two obscure technical terms in the biblical texts describing King Solomon's palace and temple in Jerusalem.

#### KISILEVITZ 2020

Shua Kisilevitz, Ido Koch, Oded Lipschits & David S. Vanderhooft, *Facing the Facts about the "Face of God", A Critical Response to Yosef Garfinkel*. [Bible History Daily 2020, Aug. 31](#).

The finds from Qeiyafa and Moza provide a significant contribution to the study of cult and religion in Israel and Judah, especially during their formative period (tenth–ninth centuries B.C.E.), and allow us to reevaluate previous finds and studies and advance our understanding. However, they are not exceptional in their appearance and do not exist in an intellectual or material void.

It is unfortunate that Garfinkel presents an unfounded and speculative identification as factual. The evidence and argumentation offered above should lay this issue to rest.

#### SCHÜTTE 2018

Wolfgang Schütte, *Where there Israelites in "Judaean Exile"?* [Antiguo Oriente 16 \(2018\), 147–180](#).

In historical terms, there is evidence of an early political use of the name "Israel" (14th–9th centuries BC) and a much later religious use of it (3rd/2nd centuries BC); in the time in between, its predominant designation was "Samaria(ns)." Biblical and non-biblical evidence supports the notion that Israelites/Samaritans settled in Judah as refugees after 721 BC, and therefore the impulse for the emergence of biblical Israel can be located in the 8th century BC. The historiography of the Books of Kings should be studied with caution, since its textual history documents quantitative and qualitative changes that include the restructuring and deletion of texts. The literary history of the Books of Kings reveals our lack of knowledge over the sources it draws from, when it was composed, and how intensively earlier stages of the Masoretic text were revised.

Keywords: Israel | Exile | 1–2Kings | Textual Tradition | Palimpsestus Vindobonensis

## Datierung

#### BARD 2020

Edouard Bard, Timothy J. Heaton, Sahra Talamo, Bernd Kromer, Ron W. Reimer & Paula J. Reimer, *Extended dilation of the radiocarbon time scale between 40,000 and 48,000 y BP and the overlap between Neanderthals and Homo sapiens*. [PNAS 117 \(2020\), 21005–21007](#).

[pnas117-21005-Supplement.xlsx](#)

The new radiocarbon calibration curve (IntCal20) allows us to calculate the gradient of the relationship between  $^{14}\text{C}$  age and calendar age over the past 55 millennia before the present (55 ka BP). The new gradient curve exhibits a prolonged and prominent maximum between 48 and 40 ka BP during which the radiocarbon clock runs almost twice as fast as it should. This radiocarbon time dilation is due to the increase in the atmospheric  $^{14}\text{C}/^{12}\text{C}$  ratio caused by the  $^{14}\text{C}$  production rise linked to the transition into the Laschamp geomagnetic excursion centered around 41 ka BP. The major maximum in the gradient from 48 to 40 ka BP is a new feature of the IntCal20 calibration curve, with far-reaching

impacts for scientific communities, such as prehistory and paleoclimatology, relying on accurate ages in this time range. To illustrate, we consider the duration of the overlap between Neanderthals and Homo sapiens in Eurasia.

Keywords: radiocarbon | geochronology | paleomagnetism | Neanderthal

## Klima

MALIK 2020

Nishant Malik, *Uncovering transitions in paleoclimate time series and the climate driven demise of an ancient civilization*. *Chaos* **30** (2020), 83108, 1–14. DOI:10.1063/5.0012059.

Uncovering distinct dynamical regimes in the climate dynamics of the past and identifying time points where transitions between regimes occur are some of the central problems in paleoclimate data analysis. Here, we combine multiple methods with differing strengths into one coherent method, which is appropriate for the analysis of paleoclimate time series. This new hybrid framework is robust against missing values, noise, and nonstationarity prevalent in most paleoclimate data, and we employ this framework to analyze a recently released paleoclimate data series of speleothem oxygen isotope record from North India, which is a reconstruction of the hydroclimate of the region during the Holocene. Through this analysis, we provide insights into the causes of the demise of the Indus Valley Civilization.

We present a hybrid framework appropriate for identifying distinct dynamical regimes and transitions in a paleoclimate time series. Our framework combines three powerful techniques used independently of each other in time series analysis: a recurrence plot, manifold learning through Laplacian eigenmaps, and Fisher information metric. The resulting hybrid approach achieves a more automated classification and visualization of dynamical regimes and transitions, including in the presence of missing values, observational noise, and short time series. We illustrate the capabilities of the method through several pragmatic numerical examples. Furthermore, to demonstrate the practical usefulness of the method, we apply it to a recently published paleoclimate dataset: a speleothem oxygen isotope record from North India covering the past 5700 years. This record encodes the patterns of monsoon rainfall over the region and covers the critically important period during which the Indus Valley Civilization matured and declined. We identify a transition in monsoon dynamics, indicating a possible connection between climate change and the decline of the Indus Valley Civilization.

TIERNEY 2020

Jessica E. Tierney, Jiang Zhu, Jonathan King, Steven B. Malevich, Gregory J. Hakim & Christopher J. Poulsen, *Glacial cooling and climate sensitivity revisited*. *nature* **584** (2020), 569–573.

The Last Glacial Maximum (LGM), one of the best studied palaeoclimatic intervals, offers an excellent opportunity to investigate how the climate system responds to changes in greenhouse gases and the cryosphere. Previous work has sought to constrain the magnitude and pattern of glacial cooling from palaeothermometers<sup>1,2</sup>, but the uneven distribution of the proxies, as well as their uncertainties, has challenged the construction of a full-field view of the LGM climate state. Here we combine a large collection of geochemical proxies for sea surface temperature with an isotope-enabled climate model ensemble to produce a field reconstruction of LGM temperatures using data assimilation. The reconstruction is validated with withheld proxies as well as independent ice core and speleothem  $\delta^{18}\text{O}$  measurements. Our assimilated product provides a constraint on global mean LGM cooling

of .6.1 degrees Celsius (95 per cent confidence interval: .6.5 to .5.7 degrees Celsius). Given assumptions concerning the radiative forcing of greenhouse gases, ice sheets and mineral dust aerosols, this cooling translates to an equilibrium climate sensitivity of 3.4 degrees Celsius (2.4–4.5 degrees Celsius), a value that is higher than previous LGM-based estimates but consistent with the traditional consensus range of 2–4.5 degrees Celsius<sup>3,4</sup>.

## Religion

MÜLLER-KESSLER 2004

Christa Müller-Kessler, *The Mandaean and the Question of their Origin*. [ARAM Periodical 16](#) (2004), 47–60.

It seems that the Mandaean magic text corpus brings us nearer to the solving of the origin of the Mandaeans. Apart from the Mandaeans' awareness of Babylonian magic and astronomy, their Aramaic idiom can only have developed in Central Babylonia.

Finally, one can now state that the Mandaeans recruited from an Aramaic population in Babylonia and therefore, could transmit information for which we still have gaps in the Late Babylonian cuneiform sources. With the help of the editions of new text material from both language areas we shall be able to close these gaps in the near future and prove far more satisfactorily the question of the Mandaeans' Heimat.