

References

Aktuell

ALI 2020

Sheikh Taslim Ali, Lin Wang, Eric H. Y. Lau, Xiao-Ke Xu, Zhanwei Du, Ye Wu, Gabriel M. Leung & Benjamin J. Cowling, *Serial interval of SARS-CoV-2 was shortened over time by nonpharmaceutical interventions*. *science* **369** (2020), 1106–1109. DOI:10.1126/science.abc9004. s369-1106-Supplement.pdf

Studies of novel coronavirus disease 2019 (COVID-19), which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), have reported varying estimates of epidemiological parameters, including serial interval distributions—i.e., the time between illness onset in successive cases in a transmission chain—and reproduction numbers. By compiling a line-list database of transmission pairs in mainland China, we show that mean serial intervals of COVID-19 shortened substantially from 7.8 to 2.6 days within a month (9 January to 13 February 2020). This change was driven by enhanced nonpharmaceutical interventions, particularly case isolation. We also show that using real-time estimation of serial intervals allowing for variation over time provides more accurate estimates of reproduction numbers than using conventionally fixed serial interval distributions. These findings could improve our ability to assess transmission dynamics, forecast future incidence, and estimate the impact of control measures.

PESLIER 2020

Anne H. Peslier, *The origins of water*. *science* **369** (2020), 1058.

New measurements of Earth's building blocks point to a simpler water source.

PIANI 2020

Laurette Piani, Yves Marrocchi, Thomas Rigaudier, Lionel G. Vacher, Dorian Thomassin & Bernard Marty, *Earth's water may have been inherited from material similar to enstatite chondrite meteorites*. *science* **369** (2020), 1110–1113.

s369-1110-Supplement.pdf

The origin of Earth's water remains unknown. Enstatite chondrite (EC) meteorites have similar isotopic composition to terrestrial rocks and thus may be representative of the material that formed Earth. ECs are presumed to be devoid of water because they formed in the inner Solar System. Earth's water is therefore generally attributed to the late addition of a small fraction of hydrated materials, such as carbonaceous chondrite meteorites, which originated in the outer Solar System where water was more abundant. We show that EC meteorites contain sufficient hydrogen to have delivered to Earth at least three times the mass of water in its oceans. EC hydrogen and nitrogen isotopic compositions match those of Earth's mantle, so EC-like asteroids might have contributed these volatile elements to Earth's crust and mantle.

SERVICE 2020

Robert F. Service, *Spit shines for easier coronavirus testing*. *science* **369** (2020), 1041–1042. DOI:10.1126/science.369.6507.1041.

Tests using saliva are cheaper and faster than those with nasal swabs—and can be just as accurate.

SHERIDAN 2020

Adam Sheridan, Asger Lau Andersen, Emil Toft Hansen & Niels Johannesen, *Social distancing laws cause only small losses of economic activity during the COVID-19 pandemic in Scandinavia*. [PNAS 117 \(2020\), 20468–20473](#). DOI:10.1073/pnas.2010068117.

[pnas117-20468-Supplement.pdf](#)

This paper uses real-time transaction data from a large bank in Scandinavia to estimate the effect of social distancing laws on consumer spending in the coronavirus 2019 (COVID-19) pandemic. The analysis exploits a natural experiment to disentangle the effects of the virus and the laws aiming to contain it: Denmark and Sweden were similarly exposed to the pandemic but only Denmark imposed significant restrictions on social and economic activities. We estimate that aggregate spending dropped by around 25 % (95 % CI: 24 to 26 %) in Sweden and, as a result of the shutdown, by 4 additional percentage points (95 % CI: 3 to 5 percentage points [p.p.]) in Denmark. This suggests that most of the economic contraction is caused by the virus itself and occurs regardless of social distancing laws. The age gradient in the estimates suggests that social distancing reinforces the virus-induced drop in spending for low-health-risk individuals but attenuates it for high-risk individuals by lowering the overall prevalence of the virus in the society.

Keywords: COVID-19 | consumer spending | social distancing | shutdown

Significance: Social distancing laws that restrict the activities of private businesses are often seen as sacrificing the economy to save lives from COVID-19. Indeed, many countries have experienced massive reductions in consumer spending around the time they began to shut down. We show that these restrictions are, in fact, responsible for only a small portion of the drop in consumer spending. This suggests that the virus itself is responsible for the majority of the economic damage. We find that social distancing laws may provide an economic benefit: the laws reduce the economic activity of the low-risk population and can thus protect those with the greatest risk of mortality from also bearing the greatest burden in terms of reduced spending.

STARR 2020

Douglas Starr, *How Italy’s ‘father of the swabs’ fought the virus*. [science 369 \(2020\), 1040–1041](#). DOI:10.1126/science.369.6507.1040.

Microbiologist Andrea Crisanti defied the authorities to launch his testing campaign.

Anthropologie

HODGSON 2009

Derek Hodgson, *Evolution of the visual cortex and the emergence of symmetry in the Acheulean techno-complex*. [Comptes Rendus Palevol 8 \(2009\), 93–97](#).

Several recent studies have examined human evolution with reference either to the symmetry of Acheulean tools or brain structure but although these investigations have been informative they have not generally taken into account the psychology of perception in relation to recent insights into neural pathways of the

visual brain. Similarly, the interest in symmetry has largely been restricted to understanding tool morphology that has ignored research on how this property might be processed by the brain that could help provide new insights into cognitive evolution. The purpose of this paper is therefore to bring these diverse approaches together in an effort to assimilate the various findings so that a fuller understanding of the cognitive profile of hominins during the early to Middle Pleistocene can be achieved. To cite this article: D. Hodgson, C. R. Palevol 8 (2009).

Keywords: Acheulean | Symmetry | Tools | Brain | Cognition | Evolution

Archäologie

RÖDER 2020

Brigitte Röder, *Geschlechterklischees in der Archäologie, Die Keltenfürstin als Model*. [Die Zeit 2020, Aug. 28](#).

Bei Männern ist ein Ring ein Zeichen der Macht, bei Frauen ein Schönheitsattribut. In der Archäologie werden Bestattete nach Geschlechterklischees beurteilt.

Grabung

GARFINKEL 2006

Yosef Garfinkel, Ariel Vered & Ofer Bar-Yosef, *The domestication of water, The Neolithic well at Sha'ar Hagolan, Jordan Valley, Israel*. [Antiquity 80 \(2006\), 686–696](#).

A well in the Jordan Valley shows that the Neolithic revolution included an understanding of underground water and how to access it. The excavation of the well in longitudinal cross-section is also something of a revolution in fieldwork.

Keywords: Neolithic | Jordan Valley | hydrology | water | well

Klima

VOOSEN 2020

Paul Voosen, *New feedbacks speed up the demise of Arctic sea ice*. [science 369 \(2020\), 1043–1044](#).

Wave action and a growing underwater blob of heat add to impact of warming air.

Physik

GURUNG 2020

L. Gurung, T. J. Babij, S. D. Hogan & D. B. Cassidy, *Precision Microwave Spectroscopy of the Positronium $n = 2$ Fine Structure*. [Physical Review Letters 125 \(2020\), 73003](#). [DOI:10.1103/PhysRevLett.125.073002](#).

We report a new measurement of the positronium (Ps) 23S1 – 23P0 interval. Slow Ps atoms, optically excited to the radiatively metastable 23S1 level, flew through a microwave radiation field tuned to drive the transition to the short-lived 23P0 level, which was detected via the time spectrum of subsequent ground state Ps annihilation radiation. After accounting for Zeeman shifts we obtain a transition frequency $\nu_0 = 18501.02 \pm 0.61$ MHz, which is not in agreement with the theoretical value of $\nu_0 = 18498.25 \pm 0.08$ MHz.

Story or Book

REVIEW 2020

Calling Bullshit, The Art of Skepticism in a Data-Driven World. [science 369 \(2020\), 1064.](#)

There are three kinds of lies, the oft-quoted saying goes: lies, damned lies, and statistics. In a world drowning in data, statistical methods and other tools of scientific inquiry are increasingly being used to advance erroneous claims. This week on the Science podcast, evolutionary biologist Carl Bergstrom explains how to identify data-driven misinformation and disinformation.

Calling Bullshit: The Art of Skepticism in a Data-Driven World. Carl T. Bergstrom and Jevin D. West. Random House, 2020. 336 pp.