

## References

### Aktuell

COHEN 2022

Joel E. Cohen, Richard A. Davis & Gennady Samorodnitsky, *COVID-19 cases and deaths in the United States follow Taylor's law for heavy-tailed distributions with infinite variance*. [PNAS 119 \(2022\), e2209234119](#). DOI:10.1073/pnas.2209234119.

[pnas119-e2209234119-Supplement.pdf](#)

The spatial and temporal patterns of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) cases and COVID-19 deaths in the United States are poorly understood. We show that variations in the cumulative reported cases and deaths by county, state, and date exemplify Taylor's law of fluctuation scaling. Specifically, on day 1 of each month from April 2020 through June 2021, each state's variance (across its counties) of cases is nearly proportional to its squared mean of cases. COVID-19 deaths behave similarly. The lower 99 % of counts of cases and deaths across all counties are approximately lognormally distributed. Unexpectedly, the largest 1 % of counts are approximately Pareto distributed, with a tail index that implies a finite mean and an infinite variance. We explain why the counts across the entire distribution conform to Taylor's law with exponent two using models and mathematics. The finding of infinite variance has practical consequences. Local jurisdictions (counties, states, and countries) that are planning for prevention and care of largely unvaccinated populations should anticipate the rare but extremely high counts of cases and deaths that occur in distributions with infinite variance. Jurisdictions should prepare collaborative responses across boundaries, because extremely high local counts of cases and deaths may vary beyond the resources of any local jurisdiction.

**Keywords:** COVID-19 | lognormal–Pareto distribution | Taylor's law | fluctuation scaling | variance function

**Significance:** Variations in the cumulative reported SARS-CoV-2 cases and COVID-19 deaths by US county, state, and date exemplify Taylor's law of fluctuation scaling, a widespread ecological and epidemiological pattern. Specifically, on day 1 of each month from April 2020 through June 2021, each state's variance (across its counties) of cases is nearly proportional to its squared mean of cases. COVID-19 deaths behave similarly. The largest 1 % of counts are approximately Pareto distributed, with a finite mean and an infinite variance. Finding infinite variance has practical consequences. Local jurisdictions (counties, states, and countries) that plan for prevention and care of largely unvaccinated people should anticipate rare but extremely high counts of cases and deaths, by preparing collaborative responses across boundaries.

HANNA 2022

Nazeeh Hanna, Ari Heffes-Doon, Xinhua Lin, Claudia Manzano De-Mejia, Bishoy Botros, Ellen Gurzenda & Amrita Nayak, *Detection of Messenger RNA COVID-19 Vaccines in Human Breast Milk*. [JAMA Pediatrics \(2022\), preprint, 1–2](#). DOI:10.1001/jamapediatrics.2022.3581.

## RASHID 2022

Naim Rashid, *Let's talk about authorship*. [science 377 \(2022\), 1574](#).

As a Ph.D. student, I was excited when a friend proposed we collaborate on a project. I asked my supervisor for permission and he happily agreed, but advised that we should define our expected contributions and credit before starting. I didn't heed his words. I wasn't going to negotiate with a fast friend; I fully trusted my collaborator to give me fair credit, and I did not want to come across as entitled. Everything went fine. We completed and published the work as co-authors. Years passed, and I forgot my supervisor's advice.

Over the following years we all moved on to different institutions, and I noticed my colleagues no longer included me on papers about work that began during our time together.

## VOGEL 2022

Gretchen Vogel, *New Omicron strains may portend big COVID-19 waves*. [science 377 \(2022\), 1479](#). DOI:10.1126/science.adf0777.

## Anthropologie

## REARDON 2022

Sara Reardon, *Did this gene give modern human brains their edge?* [nature 609 \(2022\), 665–666](#).

A mutation present in modern humans drives greater neuron growth than does an ancient hominin version.

## Bibel

## JOOSTEN 2022

Jan Joosten, *“King Sihon, who dwells in Heshbon”, A textual problem in Num 21:34 and Parallels*. [unknown \(2022\), preprint, 1–5](#). .

Substantially, the contribution of this note may seem trifling. The text-critical issue is of little importance for interpretation. Methodologically, however, the case is interesting because diachronic syntax, verbal semantics and textual criticism work together to produce a more precise reading of the four passages under discussion.

## WINDERBAUM 2022

Ariel Winderbaum, *Jerusalem's Growth in Light of the Renewed Excavations in the Ophel*. [Tel Aviv: Archaeology 49 \(2022\), 149–190](#).

TelAvivArch49-149-Supplement.pdf

The archaeological excavations at the Ophel site between 2009–2013, headed by Dr. Eilat Mazar, uncovered, for the first time in the history of Jerusalem, layers with buildings—some of them monumental—that were in use throughout the Iron I, Iron IIA and Early Iron IIB. These buildings are of great importance due to their location on the southern slopes of the Temple Mount. In this article I review these buildings, the relation between them, their date and their function. I then attempt to reconstruct a picture of Jerusalem and Judah in these formative periods.

**Keywords:** Ancient Jerusalem | Iron Age IIA | Ophel excavations | Judah | Settlement history

## Judentum

BRISCH 1879

Carl Brisch, *Geschichte der Juden in Cöln und Umgebung, Erster Band.* (Mülheim 1879).

BRISCH 1882

Carl Brisch, *Geschichte der Juden in Cöln und Umgebung, Zweite Hälfte nebst Urkunden.* (Cöln 1882).

GOLDAU 2020

HELMUT GOLDAU & YVONNE PLUM (Hrsg.), *Die jüdische Gemeinde Köln-Mülheim und ihr Friedhof.* (Köln 2020).

Der verlassene jüdische Friedhof ist ein Ort, der authentisch an die Gemeinde erinnert, an viele Menschen, die in Mülheim geboren wurden und gestorben sind. Hier spürt man die Aura der jüdischen Gemeinde, auf dem Friedhof wird sie lebendig. Man kann sich in frühere Zeiten hineinversetzen. Der hebräische Name "Haus des Lebens" wird verständlich. Er liegt abseits, dicht an der Bahnstrecke von Köln nach Norden.

Durch die Beschäftigung mit dem jüdischen Friedhof konnten einige Biografien erhellt werden. Die hebräischen Inschriften der Grabsteine sind, soweit möglich, übersetzt worden. Viele der 179 Einträge der Dokumentation geben neuen Aufschluss über Zusammenhänge und Schicksale von Familien.

SCHATTNER-RIESER 2015

Ursula Schattner-Rieser, *Die Amtsbestellung und Berufsfrage im antiken Judentum und die Frage der Quelle des christlichen Amtsverständnisses.* *Zeitschrift für katholische Theologie* **137** (2015), 334–345.

Es mag zutreffend sein dass der alttestamentliche Opferritus, der Nährboden der rituellen Handauflegung ist wovon die Amtseinzetzungen Josuas, der Älteren und Leviten inspiriert ist und sicher auch die rabbinische Amtseinzetzung. So unzertrennlich Handauflegung und Geistübertragung im christl. Verständnis der Amtsübertragung ist, so unterschiedlich ist die Auffassung der Amtseinzetzung und des Amtsverständnisses in Judentum und Christentum. M.E. ist die christl. Amtseinzetzung von geistlichen Würdenträgern der jüdischen Tradition nur vergleichbar aber keinesfalls identisch. Es geht hier um Inspiration und Ähnlichkeit was die Geste und den Ritus betrifft, jedoch nicht um Gleichheit.

Frauen können gemäß der Torah keine Priester sein. Dies ist aber heute sowieso keine brisante Frage, da es seit der Tempelzerstörung ja keinen Priesterdienst mehr gibt, da der Priesterdienst durch die Existenz des Tempels zu Jerusalem bedingt ist. Für den Gottesdienst in den Synagogen braucht es auch keine Priester, nicht einmal unbedingt Rabbinen wie wir zu Beginn gehört haben. Es stellt sich die Frage ob Frauen Rabbiner(innen) werden können und berechtigt sind öffentlich die Tora zu lesen? Es spricht im Grunde nichts dagegen da es kein ausdrückliches Verbot gibt. Im Talmud (bMeg 23a; Tos 3,11) heisst es, das jede kompetente Person zur öffentlichen Toralesung am Schabbat berechtigt ist und dass unter den sieben Lektoren, selbst eine Frau oder ein Kind, aufgerufen werden darf. Im Traktat bPessachim 43a heißt es: daß es rechtlich keinen Unterschied gibt zwischen Mann und Frau, deshalb habe sie auch die selben Pflichten und Rechte wie ein Mann, d.h. sie muß die Toragebote halten, darf Brachot sagen und Tora studieren. Diese Meinung vertrat auch der lothringische Gelehrte Raschi von Troyes (11. Jh.). Heute ist diese fortschrittliche Meinung nur noch im Reformjudentum vertreten.

## SCHATTNER-RIESER 2022

Ursula Schattner-Rieser, *Torahautorität und autoritative heilige Schriften im Judentum, Beobachtungen zum Kanonisierungsprozess der hebräischen Bibel von Qumran bis zum Talmud*. In: LIBORIUS LUMMA, WILHELM REES & ANDREAS VONACH (Hrsg.), *Religiöse Autoritäten*. (Innsbruck 2022), 241–258.

Das Grundkonzept des rabbinischen Judentums liegt in der Vorstellung der doppelten Torah-Offenbarung am Sinai, die schriftliche Torah und die mündliche, und darin, dass die mündliche Torah ständig aktualisiert werden kann und damit auf neue Lebenssituationen anwendbar ist.

## Klima

### ROHATYN 2022

Shani Rohatyn, Dan Yakir, Eyal Rotenberg & Yohay Carmel, *Limited climate change mitigation potential through forestation of the vast dryland regions*. *science* **377** (2022), 1436–1439.

s377-1436-Supplement.pdf

Forestation of the vast global drylands has been considered a promising climate change mitigation strategy. However, its actual climatic benefits are uncertain because the forests' reduced albedo can produce large warming effects. Using high-resolution spatial analysis of global drylands, we found 448 million hectares suitable for afforestation. This area's carbon sequestration potential until 2100 is 32.3 billion tons of carbon (Gt C), but 22.6 Gt C of that is required to balance albedo effects. The net carbon equivalent would offset  $\approx 1\%$  of projected medium-emissions and business-as-usual scenarios over the same period. Focusing forestation only on areas with net cooling effects would use half the area and double the emissions offset. Although such smart forestation is clearly important, its limited climatic benefits reinforce the need to reduce emissions rapidly.

## Kupfer

### NESSEL 2018

Bianka Nessel, Gerhard Brügmann, Carolin Frank, Janeta Marahrens & Ernst Pernicka, *Tin Provenance and Raw Material Supply, Considerations about the Spread of Bronze Metallurgy in Europe*. *Metalla* **24** (2018), ii, 65–72.

The paper focuses on isotopic data of bronzes from the 3rd and 2nd millennium BC. The sample sets comprise bronzes from hoards, graves, and settlements from Central and Southeastern Europe as well as the Aegean and Mesopotamia. The analytical determination of tin isotopic compositions and a possible use of tin from different ore sources between the Carpathian Basin, the Aegeo-Balkan-Complex and tin bearing regions in Central and Western Europe will be discussed. Since the 2nd millennium bronzes show in general a different isotopic composition than those of the 3rd millennium, the presented analyses indicate a possible reorientation of exchange routes in Europe during the 2nd millennium BC. This is supported by the composition of a few Aegean samples from the turn of the millennia, which have heavier tin isotopic compositions than all other sample sets. This suggests that different tin sources might have been used to manufacture these bronzes.

Keywords: Tin isotopy | Bronze Age | Europe | Mesopotamia | Cornwall | Saxon-Bohemian Ore Mountains

## Metallzeiten

NICKLISCH 2022

Nicole Nicklisch, Frank Ramsthaler, Jan-Heinrich Bunnefeld, Georg Schulz, Ronny Friedrich, Kurt W. Alt & Harald Meller, *Bioarchaeological investigations of the princely grave at Helmsdorf attesting to the violent death of an Early Bronze Age leader*. [Scientific Reports 12 \(2022\), 16139](#). DOI:10.1038/s41598-022-20720-8.

The Helmsdorf “princely” tomb, excavated at the beginning of the twentieth century, is one of the most important archaeological discoveries dating from the Early Bronze Age in central Germany. In addition to the burial inventory, which points to an elevated social position of the deceased, a number of highly fragmented skeletal remains were preserved. Forensic anthropological investigation identified three distinctive bone defects, the surfaces of which were macromorphologically and microscopically examined in greater detail. Micro-CT analyses were also carried out. The results of all examinations suggested that the defects represented three perimortem injuries. The wound morphology was indicative of the use of a bladed weapon. The combination of injuries and their locations supported the assumption of a targeted use of force to kill. A comparison of Early Bronze Age weapons and tools with the bone lesions led to the identification of a type of weapon possibly used in the attack.

## Mittelalter

CURRY 2022

Andrew Curry, *How the Anglo-Saxons settled England*. [science 377 \(2022\), 1371](#).

Genetic study of burials suggests whole families migrated to the island in the first millennium C.E.

## Neolithikum

CREMA 2022

Enrico R. Crema, Chris J. Stevens & Shinya Shoda, *Bayesian analyses of direct radiocarbon dates reveal geographic variations in the rate of rice farming dispersal in prehistoric Japan*. [Science Advances 8 \(2022\), eadc9171](#). DOI:10.1126/sciadv.adc9171.

SciAdv08-eadc9171-Supplement.pdf

The adoption of rice farming during the first millennium BC was a turning point in Japanese prehistory, defining the subsequent cultural, linguistic, and genetic variation in the archipelago. Here, we use a suite of novel Bayesian techniques to estimate the regional rates of dispersal and arrival time of rice farming using radiocarbon dates on charred rice remains. Our results indicate substantial variations in the rate of dispersal of rice within the Japanese islands, hinting at the presence of a mixture of demic and cultural diffusion, geographic variations in the suitability of its cultivation, and the possible role of existing social networks in facilitating or hindering the adoption of the new subsistence economy.

## Politik

JAMES 2021

Erin K. James, Scott E. Bokemper, Alan S. Gerber, Saad B. Omer & Gregory A. Huber, *Persuasive messaging to increase COVID-19 vaccine uptake intentions*. *Vaccine* **39** (2021), 7158–7165.

Vaccine39-7158-Supplement.docx

Widespread vaccination remains the best option for controlling the spread of COVID-19 and ending the pandemic. Despite the considerable disruption the virus has caused to people’s lives, many people are still hesitant to receive a vaccine. Without high rates of uptake, however, the pandemic is likely to be prolonged. Here we use two survey experiments to study how persuasive messaging affects COVID-19 vaccine uptake intentions. In the first experiment, we test a large number of treatment messages. One subgroup of messages draws on the idea that mass vaccination is a collective action problem and highlighting the prosocial benefit of vaccination or the reputational costs that one might incur if one chooses not to vaccinate. Another subgroup of messages built on contemporary concerns about the pandemic, like issues of restricting personal freedom or economic security. We find that persuasive messaging that invokes prosocial vaccination and social image concerns is effective at increasing intended uptake and also the willingness to persuade others and judgments of non-vaccinators. We replicate this result on a nationally representative sample of Americans and observe that prosocial messaging is robust across subgroups, including those who are most hesitant about vaccines generally. The experiments demonstrate how persuasive messaging can induce individuals to be more likely to vaccinate and also create spillover effects to persuade others to do so as well.