

## References

### Aktuell

#### CALLAWAY 2022

Ewen Callaway, *Scientists deliberately gave people Covid, Here's what they learnt.* *nature* **602** (2022), 191–192.

Only half of participants who were exposed to the coronavirus developed infections, most with mild symptoms.

#### DEAN 2022

Natalie Dean, *Tracking COVID-19 infections, Time for change.* *nature* **602** (2022), 185.

To manage the pandemic effectively, channel the power of random sampling.

Random sampling can answer those sorts of question. As long as participants are selected randomly, they will on average mimic characteristics of the wider population. Roughly speaking, testing fewer than 1,000 people can yield crucial information about 10 million, or even more.

#### GIBSON 2022

Jacqueline MacDonald Gibson, John M. MacDonald, Michael Fisher, Xiwei Chen, Aralia Pawlick & Philip J. Cook, *Early life lead exposure from private well water increases juvenile delinquency risk among US teens.* *PNAS* **119** (2022), e2110694119.

[pnas119-e2110694119-Supplement.pdf](#)

Early life exposure to environmental lead (Pb) has been linked to decreased IQ, behavior problems, lower lifetime earnings, and increased criminal activity. Beginning in the 1970s, limits on Pb in paint, gasoline, food cans, and regulated water utilities sharply curtailed US environmental Pb exposure. Nonetheless, hundreds of thousands of US children remain at risk. This study reports on how unregulated private well water is an underrecognized Pb exposure source that is associated with an increased risk of teenage juvenile delinquency. We build a longitudinal dataset linking blood Pb measurements for 13,580 children under age 6 to their drinking water source, individual- and neighborhood-level demographics, and reported juvenile delinquency records. We estimate how early life Pb exposure from private well water influences reported delinquency. On average, children in homes with unregulated private wells had 11 % higher blood Pb than those with community water service. This higher blood Pb was significantly associated with reported delinquency. Compared to children with community water service, those relying on private wells had a 21 % (95 % CI: 5 to 40 %) higher risk of being reported for any delinquency and a 38 % (95 % CI: 10 to 73 %) increased risk of being reported for serious delinquency after age 14. These results suggest that there could be substantial but as-yet-unrecognized social benefits from intervention programs to prevent children's exposure to Pb from private wells, on which 13 % of the US population relies.

**Keywords:** drinking water | children's health | lead exposure | juvenile delinquency | private well water

**Significance:** Public health agencies worldwide have determined that there is no safe level for children's exposure to lead, a neurotoxin. This study shows that

lead in drinking water from private wells is significantly associated with juvenile delinquency. Compared to children in homes with public water supplies, those relying on private wells have a 21 % higher risk of any delinquency and a 38 % increased risk of serious delinquency. The steepest increases in risk occur at the lowest exposure levels. The results highlight the need to prevent lead-leaching from well components, plumbing, and fixtures in the 13 % of US households relying on private wells. They also suggest the need to decrease blood and environmental lead thresholds currently used to identify at-risk children.

#### MUIK 2022

Alexander Muik, Andrew Finlayson, Kena A. Swanson, Özlem Türeci & Uğur Şahin et al., *Neutralization of SARS-CoV-2 Omicron by BNT162b2 mRNA vaccine-elicited human sera*. *science* **375** (2022), 678–680. DOI:10.1126/science.abn7591.

s678-0375-Supplement.pdf

The globally circulating severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variant of concern Omicron (B.1.1.529) has a large number of mutations, especially in the spike protein, indicating that recognition by neutralizing antibodies may be compromised. We tested Wuhan (Wuhan-Hu-1 reference strain), Beta (B.1.351), Delta (B.1.617.2), or Omicron pseudoviruses with sera of 51 participants who received two or three doses of the messenger RNA (mRNA)-based COVID-19 vaccine BNT162b2. After two doses, Omicron-neutralizing titers were reduced >22-fold compared with Wuhan-neutralizing titers. One month after the third vaccine dose, Omicron-neutralizing titers were increased 23-fold relative to their levels after two doses and were similar to levels of Wuhan-neutralizing titers after two doses. The requirement of a third vaccine dose to effectively neutralize Omicron was confirmed with sera from a subset of participants using live SARS-CoV-2. These data suggest that three doses of the mRNA vaccine BNT162b2 may protect against Omicron-mediated COVID-19.

Alexander Muik, Bonny Gaby Lui, Ann-Kathrin Wallisch, Maren Bacher, Julia Mühl, Jonas Reinholz, Orkun Ozhelvaci, Nina Beckmann, Ramón de la Caridad Güimil Garcia, Asaf Poran, Svetlana Shpyro, Andrew Finlayson, Hui Cai, Qi Yang, Kena A. Swanson, Özlem Türeci & Uğur Şahin

#### WALTZ 2022

Emily Waltz, *Does the world need an Omicron vaccine? What researchers say*. *nature* **602** (2022), 192–193.

Public-health specialists are debating the need for a shot targeting the concerning variant.

## Anthropologie

#### SLIMAK 2022

Ludovic Slimak, Clément Zanolli, Andaine Seguin-Orlando, Ludovic Orlando, Jason E. Lewis & Laure Metz et al., *Modern human incursion into Neanderthal territories 54,000 years ago at Mandrin, France*. *Science Advances* **8** (2022), eabj9496. DOI:10.1126/sciadv.abj9496.

SciAdv08-eabj9496-Supplement.pdf

Determining the extent of overlap between modern humans and other hominins in Eurasia, such as Neanderthals and Denisovans, is fundamental to understanding the nature of their interactions and what led to the disappearance of archaic

hominins. Apart from a possible sporadic pulse recorded in Greece during the Middle Pleistocene, the first settlements of modern humans in Europe have been constrained to  $\approx 45,000$  to 43,000 years ago. Here, we report hominin fossils from Grotte Mandrin in France that reveal the earliest known presence of modern humans in Europe between 56,800 and 51,700 years ago. This early modern human incursion in the Rhône Valley is associated with technologies unknown in any industry of that age outside Africa or the Levant. Mandrin documents the first alternating occupation of Neanderthals and modern humans, with a modern human fossil and associated Neanderthalian lithic industry found stratigraphically between layers containing Neanderthal remains associated with Mousterian industries.

Ludovic Slimak, Clément Zanolli, Tom Higham, Marine Frouin, Jean-Luc Schwenninger, Lee J. Arnold, Martina Demuro, Katerina Douka, Norbert Mercier, Gilles Guérin, Hélène Valladas, Pascale Yvorra, Yves Giraud, Andaine Seguin-Orlando, Ludovic Orlando, Jason E. Lewis, Xavier Muth, Hubert Camus, Ségolène Vandevelde, Mike Buckley, Carolina Mallol, Chris Stringer & Laure Metz

## Bibel

CLINES 2007

David J. A. Clines, *The Bible and the Emotions*1. [unknown \(2007\), preprint, 1–29](#). .

Inevitably, without a study like the present one, we assume that the Hebrews thought as we do on this matter of the emotions. The dictionaries and encyclopaedias and commentaries reinforce that view, ironing out difficulties in the evidence, and normalizing the data to conform with our own sets of values. We have seen in this study how, for example, we need to reconceptualize the relation between fear and disgust, to rethink the significance of the emotion fear in connection with ‘the fear of God’, to wonder at the comparative absence of the emotions of shame and happiness from the biblical texts, to clarify our understanding of love and hate in the Bible. We have taken note of an attitude to the emotions, attested in the biblical texts, that does not see them as aspects of the human personality in need of control or channelling, but as elements that are a given part of the human condition rather than a problem in need of a solution.

Since we are aware of our emotions on a daily, often hour by hour basis, and not infrequently troubled by them and doubtful about how to handle them as mature adults, it would be hard to think of a subject more central to our lives than the emotions. And since few of us would claim to be experts at handling our emotions, most of need all the help we can get.

JOOSTEN 2019

Jan Joosten, *Classicizing in Dead Sea Scrolls Hebrew*. [unknown \(2019\), preprint, 1–10](#). .

In the present paper I have attempted to describe a further factor affecting the shape of QH. QH reflects a deliberate and systematic practice of writing Hebrew on the model of earlier texts. Like the use of old words that had fallen from use, such as  $\text{h}l\text{k}'\text{y}m$ , the revival of obsolete function words is a form of classicizing. But the process has become much more systematic. The link to classical Hebrew is not merely of a literary nature but affects the grammatical structure of the language as well.

NA'AMAN 2019

Nadav Na'aman, *A New Appraisal of the Samaria Ostraca*. [Ugarit-Forschungen 50 \(2019\), 259–271](#).

The article re-examines several debated issues in the study of the Samaria ostraca. It first suggests that the ostraca registered deliveries of wine and oil sent by royal administrators and private estate owners to celebrate festive events in the royal court of Samaria. The deliverers of the jars are the “l-men” whose names appear in the beginning of the ostraca, whereas the names of the recipients (the king and his court) are not mentioned. It then posits that the deliveries from years 9-10 were sent from royal estates, whereas those of year 15 were mainly dispatched from private estates. The difference in the source of the deliveries explains the difference in registration of the transports. Finally, it proposes that Shemida was the name of the region that surrounded Samaria. Even before the foundation of the city, numerous estates in this region must have belonged to members of the family of Shemer; other estates were acquired later by members of the Nimshide dynasty. Hence the prominent role of the royal estates among the deliveries sent from Shemida to the royal court of Samaria.

**Keywords:** Samaria ostraca | l-men | non l-men | Shemer | Amos | Shemida | lmlk jars

Der Artikel bespricht mehrere diskutierte Themen mit Hinblick auf die Samaria Ostraka erneut. So wird als erstes angenommen, dass die Ostraka Lieferungen von Wein und Öl registrierten, die von königlichen Verwaltern und privaten Gutsbesitzern verschickt wurden, um festliche Ereignisse am königlichen Hof von Samaria zu feiern. Die Lieferanten der Gefäße sind die “l-Männer”, deren Namen am Anfang der Ostraka erscheinen, während die Namen der Empfänger (des Königs und seines Hofes) in den Ostraka nicht erwähnt werden. Es wird dann davon ausgegangen, dass die Lieferungen der Jahre 9 bis 10 von königlichen Gütern verschickt wurden, während die Lieferungen des 15. Jahres hauptsächlich von privaten Gütern versandt wurden. Womit dieser Umstand die unterschiedlichen Aufzeichnungsarten der Transporte erklären kann. Schließlich wird vorgeschlagen, dass Shemida der Name der Region war, die Samaria umgab. Schon vor der Gründung der Stadt müssen zahlreiche Güter in dieser Region Mitgliedern der Familie von Shemer gehört haben; andere Güter wurden später von Mitgliedern der Nimshide-Dynastie erworben. Dies erklärt die herausragende Rolle der königlichen Güter bei den Lieferungen von Shemida an den königlichen Hof von Samaria.

## Politik

### MILKMAN 2022

Katherine L. Milkman et al., *A 680,000-person megastudy of nudges to encourage vaccination in pharmacies*. *PNAS* **119** (2022), e2115126119. [pnas119-e2115126119-Supplement.pdf](#)

Encouraging vaccination is a pressing policy problem. To assess whether text-based reminders can encourage pharmacy vaccination and what kinds of messages work best, we conducted a megastudy. We randomly assigned 689,693 Walmart pharmacy patients to receive one of 22 different text reminders using a variety of different behavioral science principles to nudge flu vaccination or to a business-as-usual control condition that received no messages. We found that the reminder texts that we tested increased pharmacy vaccination rates by an average of 2.0 percentage points, or 6.8%, over a 3-mo follow-up period. The most effective messages reminded patients that a flu shot was waiting for them and delivered reminders on multiple days. The top-performing intervention included two texts delivered 3 d apart and communicated to patients that a vaccine was “waiting for you.” Neither experts nor lay people anticipated that this would be the best-performing treat-

ment, underscoring the value of simultaneously testing many different nudges in a highly powered megastudy.

**Keywords:** vaccination | COVID-19 | nudge | influenza | field experiment

Katherine L. Milkman, Linnea Gandhi, Mitesh S. Patel, Heather N. Graci, Dena M. Gromet, Hung Ho, Joseph S. Kay, Timothy W. Lee, Jake Rothschild, Jonathan E. Bogard, Ilana Brody, Christopher F. Chabris, Edward Chang, Gretchen B. Chapman, Jennifer E. Dannals, Noah J. Goldstein, Amir Goren, Hal Hershfield, Alex Hirsch, Jillian Hmurovic, Samantha Horn, Dean S. Karlan, Ariella S. Kristal, Cait Lambertson, Michelle N. Meyer, Allison H. Oakes, Maurice E. Schweitzer, Maheen Shermohammed, Joachim Talloen, Caleb Warren, Ashley Whillans, Kuldeep N. Yadav, Julian J. Zlatev, Ron Berman, Chalanda N. Evans, Rahul Ladhania, Jens Ludwig, Nina Mazar, Sendhil Mullainathan, Christopher K. Snider, Jann Spiess, Eli Tsukayama, Lyle Ungar, Christophe Van den Bulte, Kevin G. Volpp & Angela L. Duckworth

**Significance:** Encouraging vaccination is a pressing policy problem. Our megastudy with 689,693 Walmart pharmacy customers demonstrates that text-based reminders can encourage pharmacy vaccination and establishes what kinds of messages work best. We tested 22 different text reminders using a variety of different behavioral science principles to nudge flu vaccination. Reminder texts increased vaccination rates by an average of 2.0 percentage points (6.8%) over a business-as-usual control condition. The most-effective messages reminded patients that a flu shot was waiting for them and delivered reminders on multiple days. The top-performing intervention included two texts 3 d apart and stated that a vaccine was “waiting for you.” Forecasters failed to anticipate that this would be the best-performing treatment, underscoring the value of testing.